

# COMPUTERWORLD

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## WORLDCOM PLACES BET ON IP TELEPHONY

*Struggling provider set to launch managed service; analysts see its timing as risky*

BY MICHAEL MEEHAN

Emboldled telecommunications provider WorldCom Inc. is preparing to roll out a turnkey service based on IP telephony that will enable companies to replace their traditional public switched telephone networks, Computerworld has learned.

According to internal WorldCom documents obtained by Computerworld, the vendor is training its sales force to sell a managed IP telephony service that will run over

WorldCom's frame-relay, Asynchronous Transfer Mode and IP networks. Customers will be given the choice of slowly migrating to a full voice/data/video IP network, or buying something along the lines of an old-style Ma Bell service in which WorldCom will lease all the

needed equipment to the user and route all the call traffic.

WorldCom launched WAN support for voice over IP calls in 2001 and added VOIP to

LAN desktops earlier this year. It will now combine those services with the ability to make all telephone calls over its data network. This comprehensive IP telephony service will be pitched as a replacement for companies' traditional circuit-switched networks.

While WorldCom declined to comment about such a service in advance of an official announcement, a source at the company said it's already selling the service at the enterprise level and the full offering will be released in September.

The timing is interesting, given that WorldCom is embroiled in a financial disaster following revelations that it artificially inflated revenue statements to woo investors. Analysts question whether the vendor can launch and support such a service as it teeters on the brink of bankruptcy.

*WorldCom, page 53*

### WORLDCOM WATCH

For comprehensive coverage of WorldCom developments, go to our Web site.

QuickLink: a2310  
www.computerworld.com

FRANKLIN HAMMOND

## WINDOWS GETS NEW BENCHMARK

*Public, private sectors in collaborative effort*

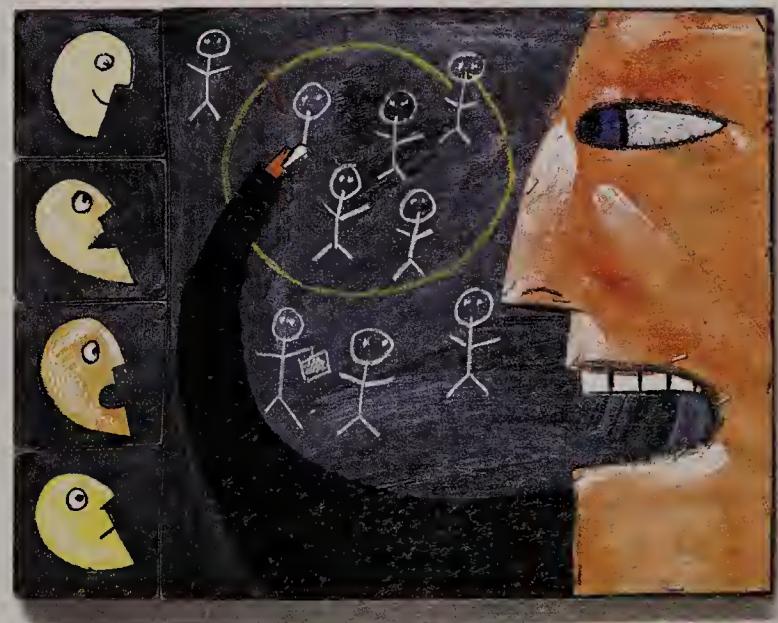
BY PATRICK THIBODEAU  
WASHINGTON

Security benchmarks for operating systems are typically arcane measures that get little public attention. But last week's release of a security benchmark for Windows 2000 Professional drew broad government backing, including

White House recognition. And this support has made the benchmark's creators hopeful that it could ultimately give private- and public-sector users more leverage with vendors.

What makes this particular benchmark unique is the cast of characters behind it. The major U.S. government agencies that deal with IT and security, such as the National Security Agency, the Defense Information Systems Agency and the General Services Administration, had a hand in crafting the benchmark, as did the Center for Internet Security, a non-Benchmark, page 53

## Taking Projects to the Extreme



**It's one of the gaping holes in project management:** IT professionals and their business constituents rarely agree on the scope or goals of a project. That's why a growing number of companies outside the U.S. are adopting so-called extreme project management. The methodology, which grew out of the extreme programming movement, forces project managers to leave the technology decisions to the tech team so they can focus on managing external stakeholders.

**Story begins on page 38.**

## MICROSOFT EYES SUPPORT CHANGES

*Licensing lessons spur alterations to program*

BY CAROL SLIWA

Microsoft Corp. is plotting changes to its Premier Support option and weighing a plan to package support services with its volume licensing programs, a company executive disclosed to Computerworld last week.

Mike Sinneck, vice president

of worldwide services at Microsoft, said lessons the company learned while introducing its controversial volume-licensing programs served as a "very large catalyst" for the support service changes that are now under discussion.

"Licensing created a large need to come to grips with what we need to change about our approach," said Sinneck, who joined Microsoft in Jan-

uary after spending 32 years at IBM.

Microsoft's Premier Support option, which is used by many midsize and large businesses, will be refreshed to "add more value for the existing customers for the same money," Sinneck said.

Less clear is the level of support that Microsoft will bundle into the volume-licensing program it introduced 14 months ago. A key enrollment deadline for that program is July 31.

*Licensing, page 16*

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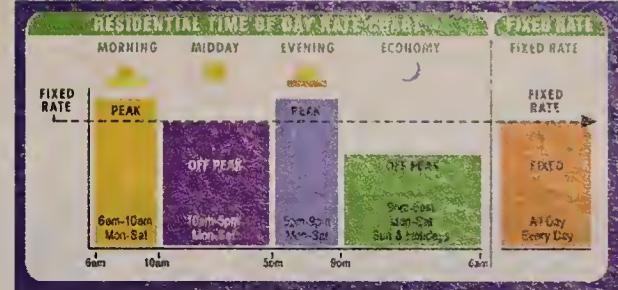


Researchers such as Melanie Mitchell (left) are developing ways to compute that look a lot like evolution.

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## OFF-PEAK PORTAL

A Web-based portal is helping Puget Sound Energy's customers save money by switching to off-peak gas and electricity usage. The upshot: The Internet self-service system has helped Puget reduce its workforce, and the utility anticipates a nine-year return on its \$45 million investment through lowered costs and increased revenue. **PAGE 40**



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**7 Most administrators** fail to patch systems for known vulnerabilities, despite increased awareness of the risks, say hackers.

**8 Intel, IBM** and three top cellular carriers join forces to expand wireless LAN coverage.

**10 The White House** unveiled the guiding principles for a cross-agency IT integration plan in the Office of Homeland Security last week.

**16 Microsoft renewed** its financial and philosophical commitment to its extensive partner community at the company's Fusion 2002 event.

## BREAKING NEWS

For breaking news, updated twice daily, visit:

QuickLink: a1510  
www.computerworld.com

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**35 QuickStudy: Unified messaging** is the term for a system used to access e-mail, voice and fax messages through a single common interface. Learn more in this week's primer.

**36 Security Manager's Journal:** Mathias Thurman fine-tunes his company's intrusion-detection system to reduce false alarms — and his workload.

## MANAGEMENT 37

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**54 Frank Hayes** argues that security concerns won't entice users to purchase pricey configuration management tools. But those who need the most efficient software are the most likely buyers.

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# ONLINE

## NINE TIPS OF NOTE

Planning to implement Web services? Head online for a checklist of points to consider.

QuickLink: a31366

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QuickLink: a1430

## TOO MUCH XML OVERHEAD?

Is the flexibility that XML offers coming at too high a cost in terms of the required overhead? Some online community members worry that XML usage will eat up too much storage space. What's your view?

QuickLink: a2330

## WHAT'S A QUICKLINK?

On some pages in this issue you'll see a QuickLink code pointing to additional, related content on our Web site. Just enter that code into our QuickLink box online, which you'll see at the top of each page on our site.

Use QuickLinks to see related stories, discussion forums, research links, archives and more.

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**AT DEADLINE****FDIC Criticized on IT Security Policies**

The Federal Deposit Insurance Corp. (FDIC) was faulted by the U.S. General Accounting Office for systems access policies that give hundreds of end users privileges they don't need, such as the ability to modify financial software and read, change and copy financial data. The FDIC said the GAO's findings will help improve its IT security.

**IBM Slims Cabling For Intel Servers**

IBM announced connectivity technology that it said will let IT managers tie together up to 256 of its Intel-based xSeries servers while using fewer switches and much less cabling than is needed now. The Advanced Connectivity Technology offering uses Category 5 cables to daisy-chain groups of 16 rack-mounted servers and supports remote systems management. Pricing starts at \$1,300, IBM said.

**Services Firm SBI To Buy Lante, Scient**

IT services firm SBI and Co. in Salt Lake City reached an agreement to acquire Lante Corp., a consulting firm in Chicago, for about \$40 million in cash. The deal is expected to close this quarter. Earlier last week, SBI announced a deal to buy some of the assets of Scient Inc., a Web consulting firm in New York that filed for bankruptcy protection.

**Movie Studio Buys 600 Workstations**

Intel Corp. today plans to announce that Industrial Light & Magic, the visual effects division of San Rafael, Calif.-based movie studio Lucas Digital Ltd., has bought 600 Pentium 4-based workstations for use in animation applications. Intel declined to identify the hardware vendor that's supplying the systems.

**HP Confirms Exit of Middleware Market**

*Sets plan to drop app server, shift focus to OpenView and other management tools*

BY JAIKUMAR VIJAYAN

As expected, Hewlett-Packard Co. last week said that it will discontinue selling its Java-based Netaction Application Server software and its Web Services middleware suite.

The company plans instead to increase its focus on and investment in its HP OpenView, HP Utility Data Center and HP Opencall software suites.

The idea is to "leverage and add value" in areas where the company already has assets, experience and leadership, said Nora Denzel, general manager of HP's software division, in a statement.

HP said it will continue to develop products in the Web services management and business activity management spaces. But it will rely on partners to deliver the application server and other pieces of the middleware stack.

To that end, the company recently announced a partnership with BEA Systems Inc., whose WebLogic application server package shares the top spot in the market with IBM's WebSphere.

BEA and HP plan to jointly market, sell and deliver integrated application server software, hardware and services across all HP operating systems. HP said it intends to pursue similar partnerships to deliver other middleware pieces.

**Consequences for Customers**

HP's decision to withdraw from the middleware market came as no surprise. The company has said for some time that it was reassessing its middleware portfolio and hinted last month that it was mulling a pullout from the market [QuickLink: 30405].

Still, the announcement is "bad news for us," said Vince Hunt, an executive vice president at Altura International Inc., a Monterey, Calif.-based company that builds online

shopping malls for customers such as Sunnyvale, Calif.-based Yahoo Inc.

HP's Netaction Application Server is a core part of Altura's software stack, and Hunt said that the vendor's decision to withdraw it from the market will force his company to migrate to another application server product.

"We saw the handwriting on the wall nine months ago when the HP/Compaq merger was under way, and we've been developing our own application server since then," Hunt said. "Unfortunately, it looks like we will have to migrate to it faster

than we had hoped to."

HP's decision runs somewhat counter to the strategies being followed by rivals IBM and Sun Microsystems Inc., both of which are trying to add value by focusing heavily on their own middleware and application server capabilities, said Joyce Becknell, an analyst at The Sageza Group Inc. in Mountain View, Calif.

"On the one hand, it is a little bit surprising that HP would want to walk away from this space," Becknell said.

But given the dominance of IBM and BEA in the application server market, HP probably figured that it would make more sense to simply partner with San Jose-based BEA than to spend the time and effort attempting to carve out its own

**Shifting Gears**

*HP's software strategy will focus on the following three areas:*

**HP OPENVIEW:** Management software designed to automate and manage key IT infrastructure processes

**HP UTILITY DATA CENTER:** Software that enables data centers to take better advantage of existing hardware and software resources

**HP OPENCALL:** Middleware for the telecommunications and wireless service and equipment provider markets

niche, Becknell added.

HP, which will continue to support its discontinued middleware for another three years, said it will provide transition program details for customers by Sept. 15. ▀

**Unisys Pursues High-End Market With Intel Servers**

*Itanium 2 systems aim for data centers*

BY JAIKUMAR VIJAYAN

The slow adoption rate being predicted for Intel Corp.'s recently introduced 64-bit Itanium 2 chip isn't stopping some companies from rolling out high-end corporate systems based on the technology.

Blue Bell, Pa.-based Unisys Corp. last week introduced two Itanium 2 servers that it says deliver mainframe-class performance at a lower cost.

The new Unisys Aries and Orion servers add to the company's ES7000 line of highly scalable Intel-based systems. The servers are built around Unisys' Cellular Multi-Processing architecture, which lets users partition a multiprocessor Intel server into multiple, smaller boxes and run mixed Unix and Windows workloads on the machine.

The 32-processor Orion se-

ries is the higher end of the two server lines announced by Unisys and comes with high-availability features such as redundant memory, processor and management consoles, and two isolated power and cooling systems. The Orion series is tuned to compete in

**Unisys' Systems****ES7000 ORION 130**

- Up to 32 Itanium 2 processors in two independent domains of 16 processors

- Up to 64GB of memory per domain

- Up to 64 internal I/O slots

- Features Server Sentinel platform management software

**ES7000 ARIES 130**

- Up to 16 Itanium 2 processors

- Up to 64GB of memory

- Up to 16 I/O slots

- Features Server Sentinel platform management

the traditional high-end Unix server market against products such as IBM's pSeries servers and Sun Microsystems Inc.'s UltraSPARC II-based systems, said Mark Feverston, a senior vice president in Unisys' enterprise server group.

"The performance is much better than first-generation Itanium and is very competitive with RISC processors from IBM and Sun," said Richard Fichera, an analyst at Giga Information Group Inc. in Cambridge, Mass.

Pricing for the Orion server starts at about \$140,000 and tops out at less than \$800,000 for a fully configured system — considerably less than the \$1 million or more that high-end Unix servers from other vendors cost, according to analysts.

"This 64-bit platform is truly a step above Intel's first Itanium. I think it at least equals or betters the offerings on the Unix side," said George Narr, CIO at PolyMedica Corp., a Woburn, Mass.-based medical products and services firm.

PolyMedica will be taking delivery of a new Orion server shortly and is hoping to get at least a 40% performance boost over its current ES7000 servers, Narr said. ▀

# Corporate America Is Lazy, Say Hackers

Vandalism of USA Today site a warning

BY DAN VERTON

**W**HEN A group of Web vandals hacked into USA Today's Web site July 11 and inserted false news stories, the Internet security community got a taste of how serious Web page defacements can be.

While most security professionals consider Web page defacements nothing more than a nuisance, hackers and analysts said the newspaper got off easy. Subtle changes to the site could have been much more

damaging, they said. In addition, the hack demonstrates the continued vulnerability of Web sites as a result of poor administration.

Although the defacement led to only minor downtime for USA Today's Web site, companies should fear the economic ramifications of such hacks, said Peggy Weigle, CEO of Sanctum Inc., a security consultancy in Santa Clara, Calif.

"Imagine a press release being posted that says the CEO and CFO are resigning due to undisclosed ethical or financial concerns. The stock price

would likely plummet immediately," said Weigle. Companies should always audit Web applications before "taking them live" on the Internet, she said.

## Hackers Find Open Doors

"We found in our auditing that 90% of all attacks stem from poor configuration and administrators that do not consistently update the software they use," said EPIC, the leader of a white hat hacker group known as Hack3r.com.

A hacker who goes by the nickname Hackah Jak agreed. "I can in minutes code a scanner to scan the Internet for 2-year-old known vulnerabilities," he said. "I've hit a lot of worksta-

tions this way and then worked my way through the network to the server."

A hacker nicknamed RaFa was the leader of the World of Hell defacement group, which racked up thousands of Web site defacements before disbanding last year. He said that in addition to making simple configuration mistakes, most administrators don't keep up with the updates and patches released by software vendors.

"They don't update services running on the system, and they set up permissions and software settings the wrong way on the Web server," said RaFa.

However, the real problem isn't laziness; it's trust, said Genocide, the leader of the Genocide2600 hacker group. Most administrators and managers simply trust that their systems are secure, he said.

"That is their first and biggest mistake," Genocide said. ▶

## Ways to Protect Web Content

- 1 USE message authentication and document-signing technologies.
- 2 DEPLOY digital rights management software.
- 3 SUBSCRIBE to automated security/patch notification services for the software vendors you do business with.
- 4 AUDIT Web server configurations, applications, guest accounts and user permissions before going live.
- 5 CONSIDER content management software that offers digital hashing of HTML documents and images.

SOURCES: BILL MALIK, AN ANALYST AT KPMG LLP IN STAMFORD, CONN., AND KEITH MORGAN, CHIEF OF INFORMATION SECURITY AT TERRADON COMMUNICATIONS GROUP LLC IN NITRO, W. VA.

## Survey Finds Sites Lack Risk Policies

According to a recent study, corporate risk management policies are rarely being applied to Web assets, which can lead to problems such as those experienced by USA Today earlier this month.

Watchfire Corp., a Web management firm in Lexington, Mass., and Hewlett-Packard Co. last week released the results of a survey that asked IT managers and business executives at 600 companies of all

sizes about their companies' Web site risk management policies and practices. The survey found that:

- More than 80% of respondents ranked Web site security as the most critical issue, followed by privacy and accessibility.
- Most organizations' risk management policies and practices

haven't kept pace with the burgeoning use of Web sites.

- Although companies are concerned about risk, some aren't clear as to what those risks are.
- Many companies that are cognizant of the risks haven't yet committed the resources to extend their corporate risk management program

to the corporate Web site.

- While organizations acknowledge the need for security, the complexity of Web sites and the underlying computing infrastructure (Web applications, servers and networks) makes it difficult to proactively identify and fix security holes.

- Dan Verton

## Aspelle Aims to Give Remote Workers Secure App Access

Start-up's software opens up systems to browser users

BY JAIKUMAR VIJAYAN

New York-based start-up Aspelle Ltd. this week will formally launch a software package aimed at letting remote workers securely access all of their companies' Web or host-based applications from anywhere, using just a browser.

Called Aspelle Everywhere, the software was originally developed for internal use by investment banking firm Dresdner Kleinwort Wasserstein with

help from Microsoft Corp. New York-based Dresdner decided to spin the technology off into a commercial product and Aspelle now operates as an independent company.

What separates the technology from others in its category is its ease of implementation and the wide range of applications and services that can be remotely accessed with it, said Simon Johnson, vice president of technology at Aspelle.

Remote users who want access to enterprise applications simply log on to a portal site. They're authenticated there and then passed on to another Web page, where they are presented

with the applications they're authorized to use.

Other vendors, such as Neoteris Inc. in Mountain View, Calif., and Tarantella Inc. in Santa Cruz, Calif., offer varying degrees of the same capability, but few have designed their products from the ground up to provide both secure access and remote connectivity, said Sally Hudson, an analyst at IDC in Framingham, Mass.

Aspelle Everywhere uses Windows Terminal Services and Citrix Systems Inc.'s MetaFrame software to provide remote access to Windows applications. Unix applications are presented to the user via Seattle-based WRQ Inc.'s Reflection or software from Fort Lauderdale, Fla.-based Citrix. Applications running on systems such as mainframes and IBM AS/400s (now called iSeries servers) are ac-

cessed using WRQ Reflection.

Aspelle Everywhere uses 128-bit Secure Sockets Layer (SSL) encryption to secure access. It supports a variety of user authentication methods, including user names and passwords, X.509-based digital cer-

tificates and SecurID technology from RSA Security Inc. in Bedford, Mass.

An SSL-based technology like Aspelle's "really fits the bill" when it comes to providing remote access to corporate e-mail applications and for file-sharing purposes, said Jeff Philips, an analyst at TeleChoice Inc. in Tulsa, Okla.

Unlike virtual private networks (VPN) and other IPsec-based remote access tools that tie users to specific machines, the SSL approach used by Aspelle and Neoteris provides more flexibility, he said.

"But it is unlikely that a company's finance department will send information back and forth regarding its end-of-year numbers over SSL," Philips said. For that, it would likely rely on something like a VPN, which provides more robust security, he added. ▶

## SNAPSHOT

### Aspelle Everywhere

- Provides secure remote access to enterprise applications.
- No client-side installation required; companies just have to install some server-side software.
- No firewall interference: All applications remain behind the enterprise's firewall, keeping only standard Internet access ports open.
- Supports industry standards such as SSL, X.509 digital certificates, RSA SecurID, HTTP, HTTPS, 3270 and 5250 emulation, and VT/Telnet.

# Intel, IBM Push for Public Wireless LAN

*Plans for nationwide Wi-Fi network being developed with cellular carriers*

BY BOB BREWIN

**I**NTEL CORP. AND IBM are using their technology and investment muscles to push the development of a nationwide public-access wireless LAN.

According to reports last week, Intel, IBM and three of the nation's largest cellular carriers have begun discussions to form a separate company that would provide nationwide high-speed wireless data services based on the 802.11b, or Wi-Fi, wireless LAN standard. The effort is called Project Rainbow.

Laura Anderson, a spokeswoman for Intel Capital, Intel's investment arm, declined to comment directly on Project Rainbow but said that the company views the development of a nationwide public-access wireless LAN "as an interest-

ing area." She added that Intel Capital is considering investments in "a couple of companies that can put wireless LANs together to make them into a wireless WAN."

IBM, which also declined to comment on Project Rainbow, already offers a product it calls the Everywhere Wireless Gateway, which lets users roam from cellular to wireless LANs. Analysts said this is an essential architectural element for any cellular company considering a move into wireless LANs.

The cellular carriers said to be involved in the Project Rainbow talks include AT&T Wireless Services Inc. in Redmond, Wash., Cingular Wireless in Atlanta and Verizon Wireless in Bedminster, N.J. All three declined to comment.

But Mark Siegel, an AT&T spokesman, said Wi-Fi is

viewed "as a complementary technology for us, and we are looking to see where it fits in."

Craig Mathias, an analyst at Farpoint Group in Ashland, Mass., said he has no doubt that one or more cellular carriers will launch nationwide public-access wireless LANs. "We could have as many as five networks," he said.

## Welcome Additions

Dennis Eaton, chairman of the Wireless Ethernet Compatibility Alliance, an industry trade group in Mountain View, Calif., said that large, well-heeled players are needed to fully develop the public-access wireless LAN market.

"Right now, coverage is sort of spotty," Eaton said, adding that the problem could be resolved by a nationwide network backed by cellular carriers and equipment manufacturers. Any such network would take at least two years to develop and deploy, he added.

Intel Capital has already

made investments in six wireless LAN start-up companies, Anderson said, and it intends to continue making investments in emerging wireless technologies. Two of the companies, STSN Inc. in Salt Lake City and iPass Inc. in Redwood Shores, Calif., are focused on the public-access wireless LAN market, Anderson said.

iPass provides global, remote access to enterprises and currently offers its users access to 120,000 dial-up and hotel room Ethernet connections and 400 wireless LAN "hot spots" worldwide, according to spokesman John Sidline.

When asked about Project Rainbow, Jon Russo, vice president for marketing at iPass, said he expects "larger companies to join a market currently dominated by smaller startups, which are currently driving growth in this industry."

Christian Gunning, a spokesman for Boingo Wireless Inc. in Santa Monica, Calif., which offers public-access wireless LAN service in a few areas, said his company welcomes Project Rainbow.

"We think the concept is great," Gunning said. "Any sign that large companies are taking an active interest in Wi-Fi is good for the industry." ▶

## AT A GLANCE

### Intel Capital's Wireless Bets

**BLUESOCKET INC.**

[www.bluesocket.com](http://www.bluesocket.com)

Burlington, Mass.

■ Wireless gateways

**INTERLINK NETWORKS INC.**

[www.interlinknetworks.com](http://www.interlinknetworks.com)

Ann Arbor, Mich.

■ Wireless LAN access authentication and authorization software

**IPASS INC.**

[www.ipass.com/main.php](http://www.ipass.com/main.php)

Redwood Shores, Calif.

■ Has 16,000 dial-up and 104,000 hotel room Ethernet connections, plus 400 wireless LAN Points of Presence

**NOMADIX INC.**

[www.nomadix.com](http://www.nomadix.com)

Westlake Village, Calif.

■ Network configuration software and subscriber/user gateways

**STSN INC.**

[www.stsn.com/index.html](http://www.stsn.com/index.html)

Salt Lake City

■ Broadband access for hotels

**TRANSAT TECHNOLOGIES INC.**

[www.transat-tech.com](http://www.transat-tech.com)

Southlake, Texas

■ Network authentication and billing software

# Microsoft Plans Foray Into Home WLAN Device Market

*Move could create security problems for corporate IT*

BY BOB BREWIN

Microsoft Corp.'s plan to enter the consumer wireless LAN market in the fall bodes ill for IT managers concerned with securing and managing their network access points, analysts said last week.

According to Craig Mathias, an analyst at Farpoint Group in Ashland, Mass., Microsoft's arrival will only add fuel to an exploding market. IDC in Fram-

ingham, Mass., has predicted that the installed base of wireless LAN cards will reach 100 million units by 2004.

But widespread growth of the home and public-access wireless LAN markets will only mean headaches for IT managers, who will likely encounter more unauthorized and insecure access points set up without their knowledge by employees, said Chris Kozup, an analyst at Meta Group Inc. in Stamford, Conn. In addition, he said users will have to scramble to integrate home and road wireless LAN use with corporate networks.

Microsoft posted some initial information about its home wireless LAN hardware on its Web site this month but declined to provide more details until it introduces the products. But Computerworld has learned that the company plans to build the devices around chip sets manufactured by Intersil Corp., in Irvine,

## Microsoft Home WLAN Hardware

■ Microsoft's WLAN products use the 802.11b chip set from Intersil and hardware manufactured by Accton Technology.

■ The company's WLAN access point/router, PC card and USB adapter have been certified to meet Wi-Fi standards.

Calif., with Microsoft-branded hardware built by Accton Technology Corp. in Singapore.

A short list of the Microsoft products that have already gained Wi-Fi certification has been posted on the Web site operated by the Wireless Ethernet Compatibility Alliance, a nonprofit trade association in Mountain View, Calif. The site shows that Microsoft has already obtained certification for a home networking access point/router, a home networking PC card and a home networking Universal Serial Bus (USB) adapter.

Sources familiar with the project who declined to be named confirmed Microsoft's plans. John Allen, an Intersil spokesman, referred questions about the deal to Microsoft.

The decision marks a shift from Microsoft's long-standing

relationship with Intel Corp., which has developed the chips that power Microsoft's desktop and server software.

"This could be huge for Intersil," said Weston Henderek, an analyst at ARS Inc. in La Jolla, Calif.

Wireless LAN products operating under the Wi-Fi, or 802.11b, standard provide 11M bit/sec. connectivity; those operating under the 802.11a standard offer transmission rates of 54M bit/sec. Microsoft said it plans to sell products based on 802.11b, but Intersil and Accton also offer 802.11a products, providing an easy future migration path for Microsoft. ▶

## PLAYING IT SAFE

Read about new security tools that beef up companies' wireless LAN protection.

**QuickLink: 31504**  
[computerworld.com](http://computerworld.com)

# Oracle vs. BEA Web Services

Features	BEA	Oracle
Model Web Services	✓	✓
Develop EJB for Building Web Services	○	✓
Develop JSP & Servlets for Building Web Services	○	✓
Debug Remote Web Services	○	✓
Profile Web Services Performance	○	✓
Optimize Web Services Code	○	✓
Validate XML for Web Services	○	✓
Support Web Services Team Development	○	✓
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# NEWS

## BRIEFS

### Microsoft's Income, Revenue Up in Q4

Microsoft Corp. reported net income of \$1.53 billion for its fourth quarter ended June 30, up from the year-earlier total of \$65 million. Both figures were reduced by charges related to investment losses, which totaled \$617 million in the just-finished quarter and \$2.6 billion a year ago. Microsoft said Q4 revenue was \$7.25 billion, up 10% from \$6.58 billion a year ago. Analysts attributed the growth to purchases made to meet a July 31 licensing deadline [QuickLink: 30803].

### Sun Ekes Out Profit; Others Still Struggling

Sun Microsystems Inc. narrowly returned to the black in its fourth quarter ended June 30, reporting a \$28 million profit despite a 13% drop in revenue to \$3.4 billion. But IBM, SAP AG, EMC Corp., Intel Corp., PeopleSoft Inc. and Siebel Systems Inc. all reported lower results year-over-year for the latest quarter. Details can be found on our Web site [QuickLink: a1150].

### EMC, HP to Share Storage Interfaces

EMC and Hewlett-Packard Co. said they're expanding a deal under which the storage rivals will cross-license some of their application programming interfaces. The agreement paves the way for Hopkinton, Mass.-based EMC and HP to develop storage management applications that can control each other's devices.

### Short Takes

**H&P** fired or suspended about 150 employees in the U.K. for violating its e-mail system usage policy.... **MCAFEE.COM CORP.** in Sunnyvale, Calif., recommended that shareholders who own 25% of its stock reject the latest buyout bid by majority owner **NETWORK ASSOCIATES LTD.** in Santa Clara, Calif.

# Homeland Security CIO Digs Into Strategy

*Says 'huge change-management initiative' will be necessary for IT to help the cause*

BY DAN VERTON  
WASHINGTON

**T**HE BUSH administration's CIO for homeland security initiatives laid out last week what he described as an integrated IT plan designed to improve areas such as information-sharing, data management and privacy.

"If we focus only on the technology, we're going to be in trouble," said Steve Cooper, senior director for information integration and CIO for the Office of Homeland Security in Washington.

And Cooper should know. Formerly CIO at Corning Inc. in Corning, N.Y., Cooper held a number of senior-level IT management positions before joining the Bush administration in March. He also previously worked as director of IT at Eli Lilly and Co. in Indianapolis and held senior-level technical positions at Computer Sciences Corp. in El Segundo, Calif., and CACI International Inc. in Arlington, Va.

#### Big Consolidation

"Unless there is an overall charter and a business strategy...the resulting IT enablement won't link beyond the organizational boundaries," said Cooper, referring to the 22 federal agencies that would be consolidated under President Bush's proposal to create a cabinet-level Department of Homeland Security. "What we're really trying to do is a huge change-management initiative."

Cooper is steering what has been described as one of the biggest initiatives of its kind, using what he called "five guiding principles." Those principles include a focus on privacy, integration of the private sec-

tor and state and local governments, data capture and reuse, the establishment of databases of record, and the leveraging of work that's already under way to create a single federal enterprise architecture.

Howard Schmidt, vice chairman of the President's Critical Infrastructure Protection Board and formerly chief security officer at Microsoft Corp., credited Cooper and his colleagues with establishing an "entrepreneurial mind-set" within the new office. Schmidt, who's working with the private sector to meet a September deadline for releasing the national cybersecurity portion of the president's homeland security plan,

also said that more research and development are needed on issues related to IT security.

Cooper agreed, adding that the federal government will need to weigh in on research and development and on pilot projects that the private sector and state and local governments can't afford to get off the ground. "In a lot of key areas, we need to provide a lead role, which translates to 'Yes, there needs to be initial funding,'" he said.

Many of the independent pilot projects in homeland security will eventually fall under the Homeland Security Department, said Cooper. Those, such as the ones now under way at airports and seaports around the country, will be added to the list of projects being planned by Cooper's office, he said.

## Planned Federal Pilot Projects

1. **CONSOLIDATE** criminal and terrorist watch lists.

2. **CREATE** a homeland security portal to focus on the protection of critical infrastructure.

3. **ESTABLISH** a coalition of law enforcement agencies to share information. Ten states, led by the Florida Department of Law Enforcement, will collaborate with federal agencies on data mining and information-sharing.

Some of these so-called pathfinder projects, which will be designed to run for three to six months, will focus on emerging technologies and may also be initiated and managed by state and local governments with the direct assistance of the White House's homeland security office, said Cooper. "Our leadership role is ensuring that pilot projects cross organizational boundaries," he said. ▀

# FBI Expects Two-Year Wait To Replace Old Computers

*Will take 'extremely long time,' despite aggressive effort*

BY PATRICK THIBODEAU  
WASHINGTON

The FBI is moving aggressively to replace an antiquated computer system that uses green screens, but it will still take two years to complete the project, a bureau official told a Senate committee last week.

The two-year estimate is better than the original timeline, which put the completion date at three years from now. But June 2004 is still too long to wait, said Sen. Charles Schumer (D-N.Y.), chairman of the Senate Judiciary Committee's Subcommittee on Administrative

Oversight and the Courts.

"Given that this should be one of the highest priorities that America has, it's still going to take us a couple of years," said Schumer. "It seems like an awfully long time, given how important this is."

#### Starting Points

Sherry Higgins, who was appointed in March to head the FBI's IT upgrade initiative, called Trilogy, agreed that it was an "extremely long time" but said, "The right solution takes a longer time than to just get a solution."

The FBI was nonetheless working to get some upgrades completed quickly, including one to improve the ability of agents to search databases. The FBI system's search engine

can't handle complex searches with multiple words.

One obstacle to a speedy implementation is a lack of documentation for existing systems, Higgins said.

The FBI's effort would also link all of its major criminal databases, and Higgins, a former senior IT executive at Lucent Technologies Inc. in Murray Hill, N.J., said talks are under way with other federal agencies to ensure that the systems architecture will facilitate interoperability.

Schumer also called for a private-sector advisory board, comparing it to the type of oversight now sought for auditors. "It's good for the accountants to have somebody else looking over their shoulders, giving advice," he said. Higgins said she "totally supports" that idea, as does the FBI director.

The FBI is receiving about \$507 million for IT in this fiscal year, an increase of 127% from the previous year's budget of \$223 million. ▀

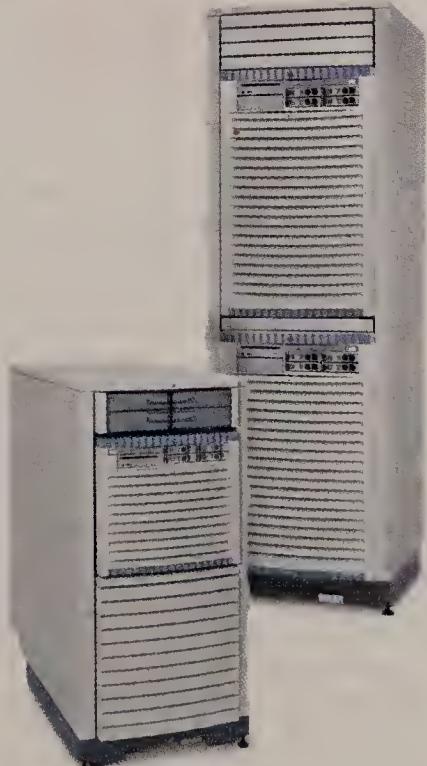


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# Public Health IT Needs \$1B in Funding

*Experts call emergency funding of \$109M a down payment, say long effort required*

BY BOB BREWIN

**E**VEN THOUGH Congress pumped an extra \$109 million into the public health IT infrastructure in this year's federal budget, the nation's state and local public health departments need at least 10 times that to meet anticipated demands.

It will take at least \$1 billion in funding over 15 years to deploy networks and information systems designed to coordinate responses to a bioterrorism attack or major epidemic, according to federal and state public health officials.

The Centers for Disease Control and Prevention (CDC) in Atlanta expects to use the emergency funding within the

next year to connect state and local public departments serving 90% of the population to the nationwide CDC-managed Health Alert Network (HAN).

That will be an improvement from March 2001, when the CDC put out a report that compared the U.S.'s public health IT infrastructure to a "pony express system" that relied on pa-

per reports and phone calls in an Internet world. When the report was released, only about half of the country's 59 state and territorial health departments and 6,000 local health boards had full-time Internet connectivity, and another 20% lacked e-mail.

Dr. Ed Baker, an assistant surgeon general in the U.S. Public Health Service who manages the CDC's Public Health Practice Office, called the \$109 million in supplemental funding a modest invest-

## Health Alert Network Facts and Figures

**\$109 million** was added to the CDC's IT budget for HAN, as well as for computer and information systems. The agency also included \$34 million in its regular budget for HAN.

**HAN within months will provide** high-speed Internet connections to state and local public health departments serving 90% of the population.

**HAN will also provide** e-mail and online training services, including distance-learning systems that use desktop video.

ment in the public health IT infrastructure, whose capital costs he estimated at \$1 billion plus "ongoing costs for maintaining and improving it."

Dr. Georges Benjamin, secretary of the Maryland Department of Health and Mental Hygiene, considers the emergency funding a down payment. "This is just the first wave of funding. It's going to take a long and sustained effort to make it work," he said.

Benjamin, who also serves as president of the Association of State and Territorial Health Officials (ASHTO) in Washington, said it "will take 15 years to put these [public health IT] systems in place."

The population-based distribution of the IT infrastructure funds by the CDC works to the detriment of rural states such as Iowa. Dr. Patricia Quinlisk, Iowa's epidemiologist, said she is still using the postal system to send lab reports. But, she added, the new funding will provide Iowa with "desperately needed resources" for IT infrastructure.

Baker emphasized that HAN is far more than a computer network: It's designed to de-

liver critical information to public health care professionals to help battle everything from food poisoning to anthrax attacks. Computer-based training and video to the desktop are essential to this effort, he said.

## Data on the Fly

HAN funding is also used to deploy graphical systems that present information in ways that can be quickly grasped by harried doctors in the midst of a crisis, according to Elana Knudsen-Buresh, senior director of public health infrastructure policy at ASHTO.

Benjamin said such tools will help boost the capabilities of public health departments, which have struggled with inadequate systems for years. However, in order to ensure that agencies get the systems they need, Congress must keep the funds flowing, he said.

Last October's anthrax attacks highlighted the importance of public health agencies and their need for advanced technology. But Benjamin said he's worried the funding could disappear once again, "because we are a nation with a very short memory."

# Telecommuting Seen as Possible Boon to Economy

*Commerce Dept., IT firms push adoption*

BY PATRICK THIBODEAU  
WASHINGTON

In an effort to improve sluggish broadband adoption nationally, high-tech firms want companies to let workers telework or telecommute as a way to improve productivity, reduce costs and encourage baby boomer employees nearing retirement to remain in the workforce.

The initiative has the backing of the Department of Commerce, which views broadband usage as an integral part of U.S. economic development.

"Broadband deployment and usage will define the global winners and losers in the 21st century," said Bruce Mehlman, an assistant secretary at the Commerce Department. Telecommuting "is really the killer app right now that's out there for home broadband use."

Although broadband reaches some 90% of the U.S. population, only about 12% of households utilize it. Encouraging telework could help other industries delivering broadband services, such as videoconferencing and leisure-time content, say advocates.

Harris Miller, president of the Information Technology Association of America (ITAA) in Arlington, Va., said telework

"will cause a major bump" in the number of broadband users.

Mehlman attended a news conference last week to discuss the benefits of telework with officials from the ITAA and several leading high-tech firms, including AT&T Corp., Corning Inc., Siemens Information and Communication Networks Inc. and American Management Systems Inc.

Braden Allenby, a vice president at AT&T, said telecommuting policies have saved his company \$25 million in real estate costs. "We just sold our corporate headquarters — we don't need it anymore," he said.

AT&T also estimates workforce productivity gains of about \$65 million, primarily the result of time saved by employees not having to drive to work. A survey of AT&T workers in the Washington area found that about 800, or 60%, of the company's 1,400 managers work from home at

least occasionally. Those employees split the time they gain by not having to drive into work between work and personal activities, said Allenby.

"Teleworkers are very enthusiastic about teleworking, and so are their families," said Allenby, adding that 82% said telecommuting helps them better balance work and family.

Retention is also critical, especially as baby boomers begin retiring, he added. Telecommuting lets older employees work on their terms and may keep them on the job, he said.

John Jay, broadband market manager at Corning in Corning, N.Y., said telecommuters' better quality of life "enhances our recruiting position."

A national survey of 1,000 registered voters released last week (see chart) found that 20% spent 30 to 60 minutes per day commuting, 7% spent from 60 to 90 minutes, and 10% spent more than 90 minutes. ▀

## The Telelife

*A survey of 1,000 registered voters found respondents split in their attitudes toward telecommuting:*

**If you had a choice of higher salary or an option to telecommute, which would you likely take?**

Higher salary	47%
---------------	-----

Telecommuting	36%
---------------	-----

Depends on salary amount	7%
--------------------------	----

Don't know	10%
------------	-----

.....

**Would telecommuting improve work quality, productivity?\***

Agree	46%
-------	-----

Disagree	39%
----------	-----

Don't know	14%
------------	-----

.....

**Would telecommuting make you a better parent or spouse?\***

Yes	43%
-----	-----

No	46%
----	-----

Don't know	11%
------------	-----

\*Figures rounded

SOURCE: THE WINSTON GROUP, ALEXANDRIA, VA., 2002

# FAQ

## **Frequently asked question / abbrev: FAQ**

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# SIA Drops Next-Day Settlement Deadline

**Securities industry group to focus on system automation**

BY LUCAS MEARIAN

**I**N A MOVE that takes some pressure off IT managers responsible for the systems that process stock trades, the Securities Industry Association's (SIA) board last week voted unanimously to rescind a mid-2005 deadline for moving to next-day settlement of trades.

Instead, the New York-based SIA said it will now focus on a less grandiose program aimed at pushing financial services firms to automate their trading systems for straight-through processing applications that directly connect back-end systems at different companies.

Straight-through processing requires companies to make internal systems changes in order to automate end-to-end processing of stock trades. It also involves hooking systems into external trade-matching engines, such as the rival versions operated by the Global Straight Through Processing Association in Zurich and Omgeo LLC in Boston. Both use mainframes and XML-based messaging to match Buy and Sell orders.

But converting to "trade plus one day" settlements, or T+1, would be even more complex. Securities firms would have to set up new business rules and real-time or near real-time processing engines to reduce the standard for settling trades from three days to one.

Analysts estimated that switching to T+1 could cost the financial services industry \$8 billion in IT and business process costs. The business case for T+1 came under question in the wake of Sept. 11 and the ongoing economic slump.

In November, the SIA postponed the target date for the

launch of T+1 from 2004 to June 2005 [QuickLink: 24736]. Last week's vote removes the T+1 onus for at least the next two years. "What we've done is removed [the T+1] goal and replaced it with a set of straight-through processing goals," said Donald Kittell, the SIA's executive vice president, during a conference call. Next-day trade settlements will be re-evaluated by the SIA in 2004, he added.

"In this economy, this is a better move instead of making

it another Y2k Armageddon," said Shaw Lively, an analyst at IDC in Framingham, Mass.

Another thorny issue facing T+1 is the involvement of foreign exchanges, which would narrow the window for settling trades even further because of time differences. For example, IT consulting firm Accenture Ltd. this month won a contract to help design a combined straight-through processing and T+1 plan with the Japanese Securities Dealers Association, the

## WALL STREET HUB

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QuickLink: 31480  
[www.computerworld.com](http://www.computerworld.com)

SIA's equivalent in that country. But the problem is that Japan is 12 hours ahead of the U.S., said Pat Tsien, a managing partner at Accenture.

The U.S. Securities and Exchange Commission said in May that it was considering mandating a move to T+1 and would release a plan for public comment by September [QuickLink: 30002]. However, Kittell said, "the sum of those comments, I would suggest, will not be a strong consensus."

The SIA has for the past three years pushed for both straight-through processing and T+1 under a single program. Kittell said its subcommittees will set new target dates for industrywide adoption of straight-through processing after the SIA's conference in October. ▶

## Go Right Through

*Key facets of the SIA's straight-through processing program include the following:*

**Improving the timeliness** and accuracy of trade matching with institutional transaction processing capabilities

**Using electronic trading** certificates to reduce the need for paper stock certificates and forms of payment such as checks

**Automating the processing** and reporting of corporate financial actions such as stock splits and recapitalizations

**Automating the securities** lending business, which supports traders who are involved in the short-selling of stocks

# Users Keep Faith as i2 Plans Layoffs, Other Cuts

**Supply chain software vendor seeks turnaround after ninth straight loss**

BY MARC L. SONGINI

Looking to bolster its sagging revenue and stop a string of quarterly losses, i2 Technologies Inc. is embarking on a major revamp of its supply chain management software and corporate structure.

Dallas-based i2 last week announced plans to slash its annual operating costs by about 30% through moves such as closing facilities and laying off up to 1,400 of its 4,800 employees. i2 also said it will move more of its development work to India, reduce the number of systems it supports and prune some of the less central components of its product line.

The cost-cutting initiative follows a net loss of \$757.4 million on revenue of \$119.6 million during the second quarter (see box). Sanjiv Sidhu, i2's chairman and CEO, said in a statement that the company is "intensely focused" on becoming profitable and hopes to get operating expenses in line with revenue by year's end.

However, some analysts said

they have reservations about the future for i2 and its users.

Karen Peterson, an analyst at Gartner Inc. in Stamford, Conn., said the layoffs may pose a risk to i2's customer satisfaction levels, especially with users who are installing its

## The Skid Continues

### i2's problems

■ The \$757.4 million net loss for the second quarter was the company's ninth straight quarterly deficit.

■ Revenue for the second quarter dropped 52% from last year's figure, with software sales plummeting from \$106 million to \$26 million - a 75% decline.

### i2's plan

■ Cost-cutting actions will include cuts of about 30% of the company's operating expenses and the closing of some facilities.

■ More development work is being shifted to India, and the number of hardware/software platforms i2 supports will be reduced.

software now. "What could happen is that those customers in active implementations could be hit with consulting turnover," she said.

### 'High-Risk Time'

Meanwhile, the supply chain applications sold by enterprise resource planning software vendors such as SAP AG and Oracle Corp. are good enough for many companies, Peterson said. To counter that, she added, i2 needs to better integrate its applications so they can interoperate without coding by users. "This is a high-risk time for i2," Peterson said.

An i2 spokeswoman said the company offers tool kits to help users integrate its products. But i2 is also doing in-house integration work, and Chief Marketing Officer Janet Eden-Harris said that one of i2's goals is to more tightly connect its planning and forecasting applications to its supply chain execution software.

Despite the rough times, users expressed continued faith in i2. Sandie Foster, a director of the Atlanta-based i2 User Group and marketing manager at IT services firm SBI and Co. in Salt Lake City,

said she has "every confidence in i2" in light of the restructuring and management changes.

Foster cited the return of co-founder Sidhu as i2's CEO and the promotion of Sam Nakane to chief operating officer in April as positive steps for the company. Sidhu had given up the CEO job last year, though he remained as i2's chairman.

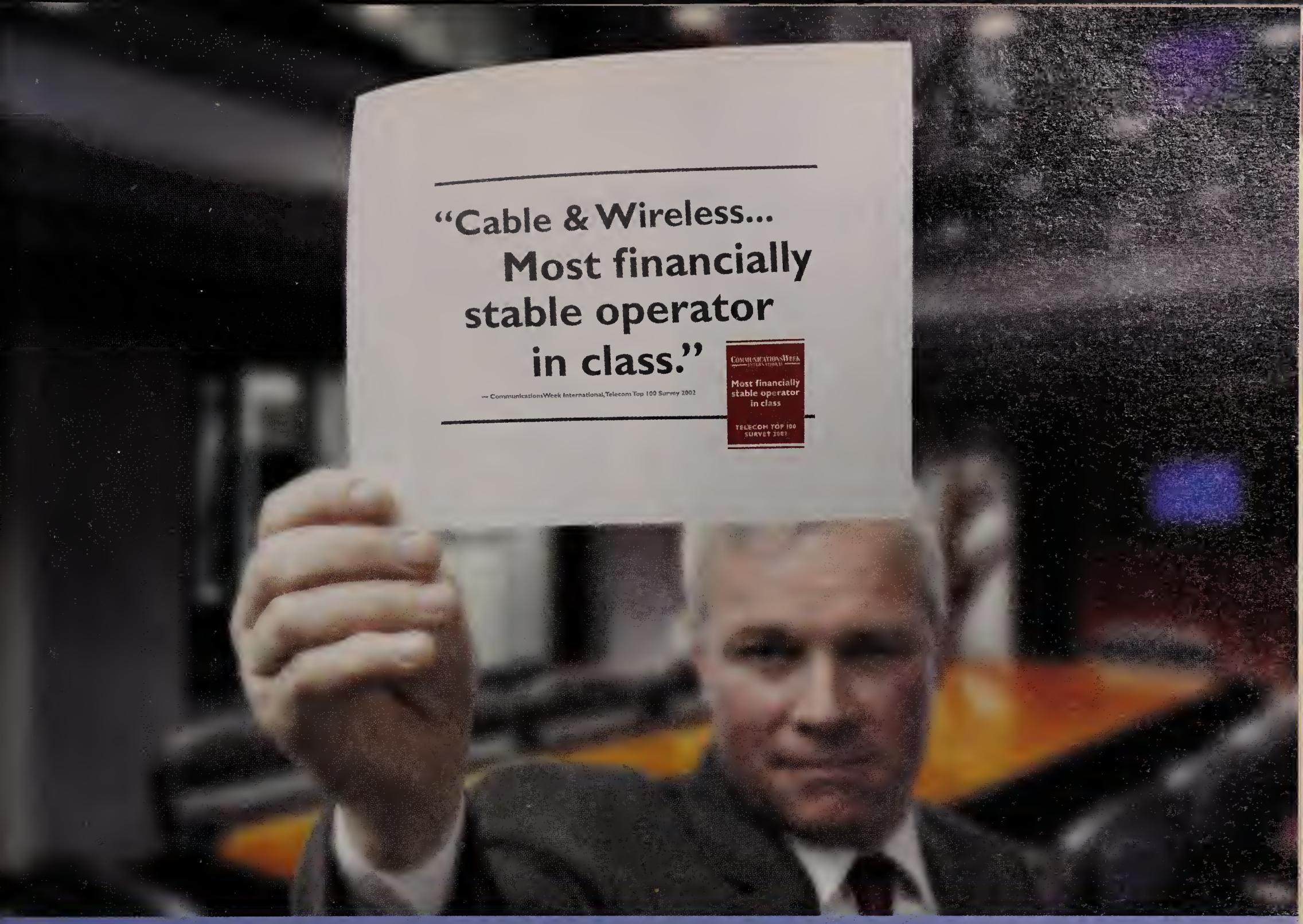
The quality of i2's support slid when the company expanded into new technology areas, said Ellen Martin, vice president of supply chain information systems at VF Corp., an apparel maker in Greensboro, N.C. But Sidhu's focus "always was customer service," she added. "They took a side street when he gave up the CEO position. I think they're now on the main road again."

VF, which makes products such as Wrangler and Lee jeans, runs i2's supply chain and factory planning applications and plans to install its demand fulfillment tool. Martin said she approves of i2's turnaround plan but wants to see the vendor deliver on its promises. ▶

## TIME FOR A CHANGE

For more details on the product changes planned by i2, visit our Web site:

QuickLink: 31473  
[www.computerworld.com](http://www.computerworld.com)



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# Microsoft Renews Its Partner Commitment

**Aims to soothe the 'uproar' over its consulting moves**

BY CAROL SLIWA  
LOS ANGELES

Microsoft Corp. took advantage of an opportunity at its Fusion 2002 conference here last week to announce a \$500 million investment in its partner community and to assure its partners of their importance in its long-term success.

That point needed to be emphasized perhaps more than usual at this year's partner event, since many of Microsoft's partners had gotten rather prickly just over a year ago after the company outlined a serious push into the consulting services space.

During his closing keynote address, Microsoft CEO Steve Ballmer acknowledged the "troublesome" change that his company had subjected its partners to during the past 12 months.

"We've learned a lot about how to focus — or not focus — our consulting force in the last year," Ballmer told conference attendees. "Our strategy's never changed in what we're trying to do in consulting."

"But it sure looked that way in the early part of the year," he said, "because we managed to get a misalignment between our incentives and our resources and our strategy in the marketplace that caused our consultants to look sometimes less like a friend and more like a foe than we ever would have intended them to."

Microsoft brought in 32-year IBM veteran Mike Sinneck in January to head its services division, and Sinneck wasted no time in addressing the situation that, as he put it, had gotten partners into "an uproar and sort of a fever pitch."

## MORE THIS ISSUE

Computer Associates is also making plans to enhance its partner program. To learn more, turn to page 20.

"We were competing with partners," Sinneck told *Computerworld*. "Being a prime contractor [on consulting projects], thinking about making profit in the services business created all the wrong behaviors." So he said he worked to "put it back the way it was." Sinneck directed his field force not to be the prime contractor, even though he recognized that there might be exceptions with some large customers that insist on it. Microsoft instead would "fit" its resources underneath, he said.

To the outside world, Mi-

crosoft Consulting Services (MCS) had grown, in part, because it hired a large number of people. But MCS has since reduced its head count by 140 people and plans to keep it flat "because we don't want to compete with partners," Sinneck said.

## Hoping for Profits

Perhaps that will help the division's bottom line, too. Even though Microsoft hoped for a profit with its consulting services business, the company never actually saw one, according to Sinneck. Overall

service revenue — which also includes Premier Support — grew in double digits, but the division lost "tens of millions of dollars" worldwide, he said.

"As a matter of fact," Sinneck added, "on the bottom line of the P&L [profit and loss statement], it's several hundred million dollars' worth of drag."

Microsoft will now work to break even on services, which Sinneck views as "a means to an end" — helping customers get value from the company's products.

"We are not going to build an IBM Global Services," Sinneck asserted. Microsoft's core competence lies in its software products, he said, "and that's always who we're going to be."

Continued from page 1

## Licensing

Several users said Microsoft should include support with an Enterprise Agreement and the new Software Assurance maintenance program, which entitles Select and Open license holders to current versions of Microsoft products for an annual fee of 25% of the volume license fee for server products and 29% for desktop products.

"If you're going to spend the bucks to bring an Enterprise Agreement in-house, they ought to include it in there," said Jill Taylor, senior manager of workgroup engineering at The Home Depot Inc. in Atlanta. Home Depot signed an Enterprise Agreement, Microsoft's most comprehensive and expensive volume license option, in March.

Bill Lewkowski, CIO at Metropolitan Hospital and Metro Health in Grand Rapids, Mich., said software upgrades and support should be bundled for a flat fee based on the percentage of the product's cost, but he added that Microsoft's charges are "out of line."

"They should take note of best-practice application vendors that bundle software upgrades and unlimited support for a yearly fee of 12% to 18%," he said.

Informed of customer complaints, Microsoft CEO Steve Ballmer recently told *Computerworld* he could lower the percentages and instead charge more money for software products, as other vendors do. That point may be valid, but some customers remain convinced they're being charged fees that are too high compared with those of competitors.

"The company is spending a lot of effort right now trying to figure out what's the right approach as licensing evolves," Sinneck said. "How should we package things together? Should we be integrating products and licensing and services and support together in some creative way that makes sense to the customer? All those things are in play and under discussion. We don't have the final answer, but there's an intense focus on this at this point in time in the company."

"One size doesn't fit all in terms of the approach you use to solve the problem," Sinneck said. "That's what makes it very, very complicated."

Premier Support enhancements under consideration include round-the-clock telephone support for small to midsize customers that don't buy that option now, preferred access to incident support and customized Web sites, he said.

Premier Support programs will be piloted this summer

## Partner Investment

*Microsoft's \$500 million, two-year investment in its partner community includes the following:*

**FIELD STAFF INCREASE,** to include partner account managers, technical specialists and telesales representatives to work with partners and customers; \$4 million for training partner account managers.

**E-LEARNING CENTER,** a Web-based tool for customized sales and technical training via online courses.

**INCREASED AVAILABILITY** of support for partners via the telephone and newsgroups.

400 hours at its disposal and, if the contract's end date creeps up before the retailer has used up its time, Home Depot can bring in an expert to do on-site training of internal support staffers, Taylor noted. "We can get the full benefit of what we purchased," she said.

So far, however, that offering is being piloted only in the U.S., according to a Microsoft spokesperson.

Richer offerings that integrate consulting and support "life cycle" services are anticipated for existing Premier Support users, and new entry-level options are expected for corporate and small-business customers, Sinneck said.

Sinneck said he expects a stand-alone purchase of support to be more expensive than it is for a customer who has a "broad, deep annuity relationship with us," but he doesn't think any conclusions will be reached until the fall or early next year.

Alvin Park, an analyst at Gartner Inc., said that if Microsoft bundles support with maintenance, it must be careful that it doesn't take away from its Premier Support revenue stream.

Yet most other software vendors, including IBM and Oracle Corp., offer combined packages of upgrade rights and support, "so there may be pressure on Microsoft," Park noted.

## Microsoft Support Options

### ■ Microsoft Professional Support

**TARGET CUSTOMER:** Small and midsize businesses

### ■ Microsoft Authorized Premier Support (MAPS)

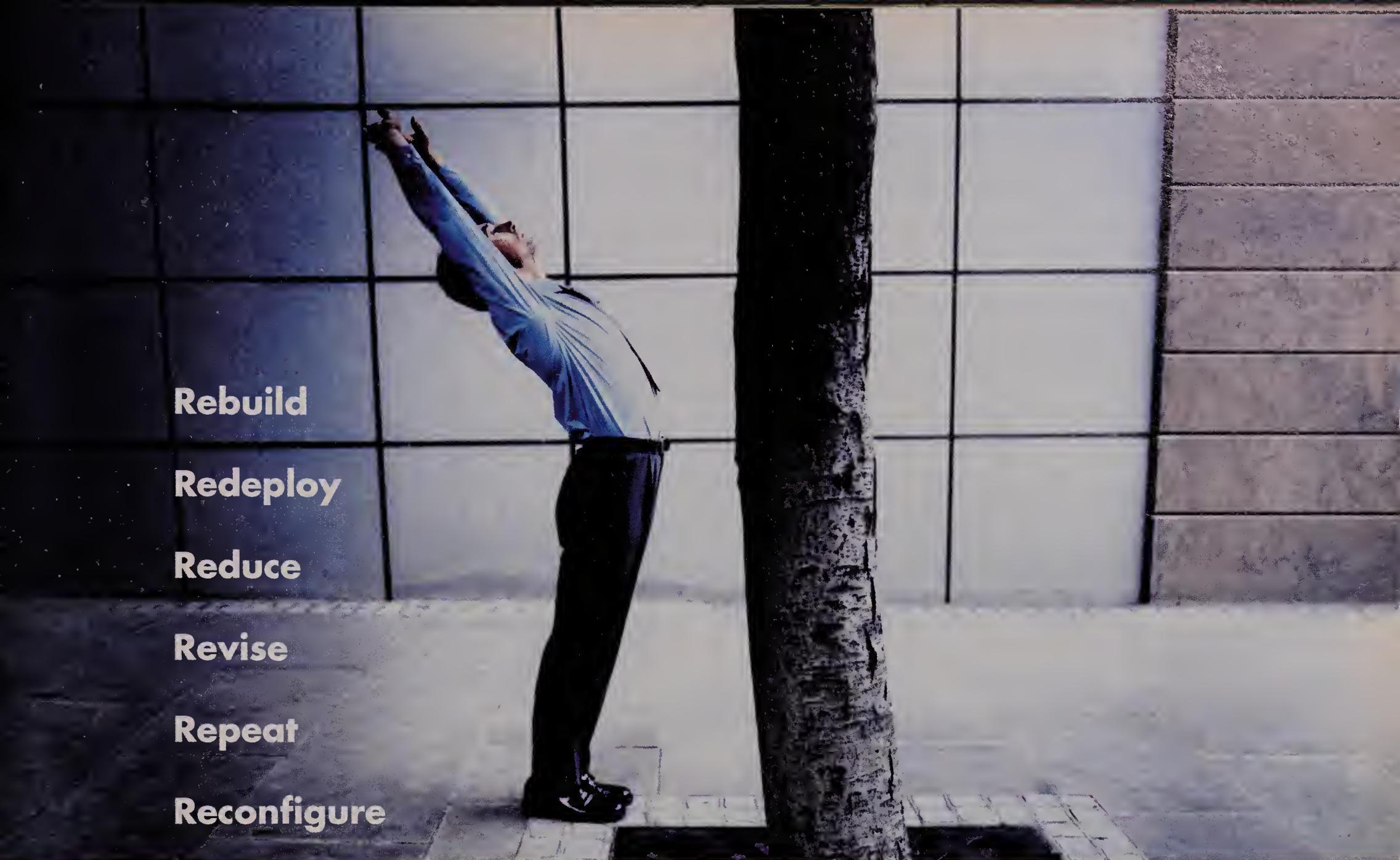
**TARGET CUSTOMER:** Midsize and large businesses

### ■ Microsoft Premier Support

**TARGET CUSTOMER:** Large corporations

**MORE ONLINE:** For a detailed look at Microsoft's support options, visit our Web site.

 **QuickLink:** a2340  
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A close-up photograph of a man with short brown hair, wearing a red button-down shirt. He is looking directly at the camera with a neutral expression. The background is slightly blurred, showing what appears to be a window or a glass partition.

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# Smart Boxcars Give Rail Shippers Control

New refrigerator cars rely on satellites

BY BOB BREWIN  
AND LINDA ROSENCRANCE

**U**NTIL ABOUT 18 months ago, shippers of perishable products that consigned their loads to refrigerated boxcars had to act on faith that a shipment would make its way cross country at the right temperature without the refrigeration unit breaking down or running out of fuel.

Sometimes the shipper ended up with a load of rotten oranges, bad cheese or spoiled juice. But that's changing as railroads roll out new, "smart" refrigerator cars — or reefers, as they're called — that use satellite communications to let shippers monitor and control car temperatures from a secure Web site. The technology also allows them to pinpoint a car's location to within a few feet.

Dave Fleenor, assistant vice president of perishable marketing at Burlington Northern Santa Fe Corp. (BNSF), said the railroad uses a satellite control system from StarTrak LLC in Morris Plains, N.J. The system lets Fort Worth, Texas-based BNSF change the temperature setting of each refrigerated unit, diagnose problems and control what's going on inside each car.

## Fresh Fruit

Remote control means shippers may never have to face another load of spoiled perishables again, said Scott Slifkin, president of StarTrak. If a refrigeration unit breaks down, a microchip controller card alerts the shipper and the railroad, which can quickly dispatch a technician to fix the problem.

"That's important to shippers such as Kraft Foods Inc. in Northfield, Ill., Fleenor said. Kraft started shipping cheese on BNSF before the new refriger-

ated cars were used, moving about 368 carloads of cheese via the railroad in five years. Since the refrigerated cars came online in August 2001, Kraft has nearly doubled that number, said BNSF spokeswoman Suann Lundsberg.

In addition to the controller, StarTrak equips each reefer unit with a Global Positioning

System (GPS) receiver that automatically determines the car's position to within 10 feet. In the refrigeration unit of each car, StarTrak installed a satellite communications transmitter and receiver, which move data over the MSAT system operated by Mobile Satellite Ventures LP in Reston, Va.

The satellite modem receives data from the receiver and system monitors on the cars and relays it to a secure,

shipper-accessible Web site operated by StarTrak.

Tropicana Products Inc. in Bradenton, Fla., which ships fresh orange juice from Florida to Northeastern markets, is retrofitting all of its reefers with StarTrak technology, said spokeswoman Kristine Nickel.

"When the system is fully [deployed] in the next 18 to 24 months, we will have the ability to have the cars communicate with us and let us change the temperature [if necessary], so a load of juice won't be damaged," she said.

Bob Smith, the vice president of transportation at Sunkist Growers Inc. in Sherman Oaks, Calif., said that although the

## AT A GLANCE

### Smart Reefers

- Embedded microchip controller card monitors system status and temperature.
- Built-in GPS system tracks location to within 10 feet.
- Satellite transmitter/receiver relays system status to secure Web site.
- Web site lets shippers adjust reefer temperatures and track location.

StarTrak system lets him monitor temperatures, its location capabilities are wanting. "The location [service] is weak," he said. "Sometimes I don't get an update for 12 to 18 hours." ▶

## Computer Associates Pushes Partnering Program

**P**lans include online support, advisory board

BY MARC L. SONGINI

Computer Associates International Inc. continues to work on boosting its technology lineup and gaining a competitive edge through partnerships. To that end, the company plans to increase online support for technology partners by year's end and create a partner advisory board next year.

Additionally, the Islandia, N.Y.-based software maker last week detailed some of the success stories of its year-old CA Smart Solution certification process.

The program ensures that companies that sell their hardware and software along with CA products are fully certified for interoperability and have adequate technical support from CA. About half of the approximately 300 CA Smart Solution partners have already received the certification, and CA hopes to get the remainder on board in the next three months.

Holdout companies, howev-

er, are in jeopardy of losing their partner status, according to Stacy Leader, vice president of the partner program. "We are re-evaluating where we are and then will be moving forward and either decide to partner with them or keep their name on file," Leader said. "They will either jump on the train with us or part ways."

Leader said last year's CA Smart Solution announcement represented a turnaround for the company. At the time, CA said that, instead of acquiring other companies, it would rely on partners to fill gaps in its

Historically, partnering has not exactly been what you would call a core competency [of CA].

JAMES GOVERNOR,  
CONSULTANT, ILLUMINATA INC.

technology lineup.

CA will continue to enhance the program. The company plans to add more online technical support for partners and create a partner advisory board within the next year.

## CA Replaces Four Board Members

CA said last week that it has added four members to its board of directors to replace four directors who intend to step down at the board's annual meeting next month. Among those departing is longtime director Willem F.P. de Vogel, who was targeted for removal by a shareholder-led proxy campaign to revamp CA's board.

Three of the four retiring directors are leaving because of CA's newly enacted eight-year term limit on the service of outside di-

rectors, according to the company. CA adopted the term limits in May as part of a broader corporate governance overhaul.

Joining CA's board are Vivendi Universal Games CEO Kenneth Cron, former Salomon Brothers Inc. general partner Robert E. La Blanc, technology investor and entrepreneur Alex Serge Vieux and former CBS Inc. Chairman and CEO Thomas Wyman.

— Stacy Cowley,  
IDG News Service

CA's Smart Solution initiative is to some degree addressing long-term weaknesses in CA's partnering strategy, according to James Governor, an analyst at Nashua, N.H.-based consultancy Illuminata Inc.

"Historically, partnering has not exactly been what you would call a core competency" of CA, said Governor. While CA traditionally has been a direct sales firm, the Smart Solution program "shows a systematic attention to partnering that CA has sometimes lacked," he added.

However, in terms of channel support, CA's competitors generally offer something similar for their partners, said Governor. For example, Microsoft Corp. just announced a \$500 million boost to its channel marketing budget [see story, page 16].

Among the companies that have bought products from CA-certified partners is Party City Corp. in Rockaway, N.J. Party City uses CA partner G&Z Systems Inc.'s PollView data transportation management application, which ties into the party supply retailer's Unicenter installation.

According to Richard Zuckerman, president of Hawthorn, N.Y.-based G&Z, having the certification, which his company received last month, allows customers to feel more comfortable with the idea of going to third-party providers. ▶



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# Check Point President Ungerma Sees Light at End of VPN Tunnel

**Vendor waits out stifled IT buying environment**

BY DON TENNANT

**Jerry Ungerma**, president of Check Point Software Technologies Ltd. in Redwood City, Calif., earlier this month spoke with *Computerworld* about how the firewall/virtual private network (VPN) market leader is faring in the current economic environment, and where the company is headed amid expectations of a recovery. Excerpts follow.

**What is Check Point's relationship with WorldCom?** WorldCom is a very big partner of Check Point. They used to carry multiple security products, but sometime last year, they decided they were going to standardize on one security product. Right now, we are the [sole] security product that WorldCom packages and resells, on a stand-alone basis as well as a managed service offering, on a worldwide basis.

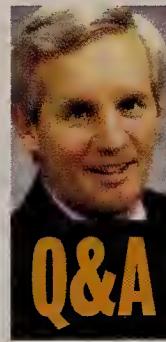
**Are you concerned about WorldCom's financial problems?** Obviously, their core business has been impacted with the telecom slowdown, and they're dealing with some other issues. But right now, we have a very good relationship. They're a very good partner, and they've been doing very well for us.

**How has the meltdown in the telecommunications sector affected you?** It's not had a big impact on us. The biggest impact has been the overall economic slowdown — the IT spending slowdown, as opposed to telecom specifically.

**Your first-quarter results were down across the board from the same period a year ago. I know you're in a quiet period until your second-quarter financial results are released on July 22, but what can you say about your financial outlook in general?** One of the things that we still see is that security is one of the more important areas that IT executives are focused on. We still think we're getting a larger percent of the spending — and the increase in spending, to the extent

that there is any — than other kinds of technology products.

This year, we haven't seen as much of an economic recovery as we expected, although most of our projections were for recovery in the second half of the year, with most of it coming in the fourth quarter. We're not there yet, so we don't know if it's going to happen. But we do know that people are not being allowed to buy as much as they need right now. They're being very cautious in their spending, delaying, to some extent, some of the full implementations of projects. But we still think security is at the top of the list, from a focus and spending standpoint.



**Q&A**

**When you announced that you were going to end maintenance support for Version 4.1 of your firewall/VPN product at the end of this year, some of your customers were pretty upset. Where does that stand?** The fact is, we've extended the date for support of 4.1 because of that input, and we work with customers to have them upgrade. We extended it to June 30, 2003.

The fact is, they get to upgrade for free. We're not forcing them into it or charging them for it, as long as they're on subscription, which the vast majority of the base is.

**Do you have any new-product development plans for the immediate future?** We see the need for firewalls and VPNs continuing to grow, even in the enterprise space. Most of the VPNs have gone into intranet deployment, tying in remote employees and offices. We see there's a big opportunity coming, and we're going to bring out a management capability to really make extranets a reality, where companies start tying in partners, customers and suppliers into their networks.

**When are we going to see this?** Before the end of the year. We've already brought to market the beginnings of it, the foundation for the capability. ▶

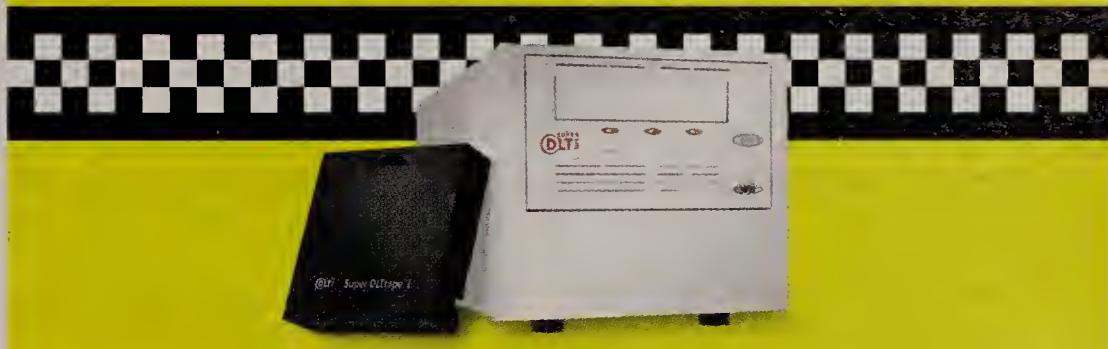
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For the full version of our interview with Jerry Ungerma, visit our Web site:



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PATRICIA KEEFE

# No More Blind Faith

**A**FEW YEARS AGO, my brother and I coincidentally decided to vacation in the San Juan Islands. He likes to go first class; I tend to wing it. While he and his family stayed at four-star B&Bs, my family ended up in some funky accommodations off the beaten path. Net result? They listened to ferry announcements all night long while we communed with hummingbirds inches away and enjoyed incredible views of the islands. The moral? First tier may be the most expensive, but it isn't always the best.

Nor, as recent months have borne out, is it always the safest. To be sure, nobody runs around anymore saying things like, "No one ever got fired for buying IBM." But the expectation remains that top-tier companies are safe bets. That's why many WorldCom customers can't bring themselves to worry too much about the vendor's very pressing legal and financial predicaments. And it's why, despite the threat imposed by endless antitrust trials, Microsoft users have consistently said that the outcome won't affect their purchasing and technology plans.

This reaction is somewhat understandable. Amid the steady drone of disappointing earnings reports and layoffs, life has pretty much gone on as before. Maybe you lost a sales contact or some nice but not necessary hand-holding services, or perhaps a minor product line got the ax. Nothing you couldn't maneuver around.

But today we've got some nasty added twists. A stubborn recession in the high-tech sector is pushing some suppliers past internal tinkering. SAP, for example, will terminate some third-party services, and Sprint will cut DSL operations to some cities. And while IBM's recent dumping of its disk drive business may not affect

you directly, it underscores that even Big Blue is carefully re-evaluating its entire product line.

Adding to the uncertainty of the long-term availability of products and services is the constant drumbeat of corporate "misstated earnings," those dubious-to-illegal accounting practices fueled by unbridled greed in some corporate suites.

It's not just WorldCom. Xerox and Qwest are also under investigation for accounting missteps. The number of scandals overall is such that the government and the judiciary have actually been moved to action.

The stakes for IT are suddenly

higher. You need a lot more in your corner than blind faith that someone will buy the assets or take over the service if your primary vendor goes under. Sure, someone may well snap up the cool technology. But the new owners might change it. They might take it in a new direction. They might package it differently. They might charge more for it and support it less.

So you need to prepare. Keep a sharp eye on the balance sheet of your strategic vendors. Start asking questions and formulating contingency plans. Work your assumptions and expectations about continued service into legally binding documents. Scout backup providers for critical products and services.

After all, if vendor executives have inflated their companies' earnings and lied to or misled their auditors, shareholders and the SEC, can you seriously rely on their words of assurance? When times are good, the customer is always right. But when the chips are down and the creditors or jailers are at the door, you can bet your last angry user that the customer is at the bottom of the list. The only one who can ensure and insure the services you provide your company is you, and you can take that to the bank. ▶



PATRICIA KEEFE is editorial director at *Computerworld*. You can contact her at [patricia\\_keefe@computerworld.com](mailto:patricia_keefe@computerworld.com).



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PIMM FOX

## Use VPNs for Security and Transparency

**P**RIDENT BUSH speaks about the need for financial transparency: the ability to figure out what's going on inside a business. But the only way this will happen is for top executives to create and use IT infrastructure to get vital data when it's needed, rather than after regulators and investors have been duped.

Using IT for a clear picture of business operations isn't new, but it has acquired increased urgency, for practical reasons in addition to legal ones.

Last year, when William S. Sciortino joined Classic Residence by Hyatt (the senior-living affiliate of Chicago-based Hyatt Corp.), the company was chasing a scattered paper trail that often meant financial statements didn't get closed for 60 days. The company's 15 luxury living facilities weren't connected to a network (they were using dial-up connections), had no file-sharing and relied on faxes, telephone calls and e-mail attachments of information such as Excel spreadsheets.

"It was like running 16 different databases, and we were manually consolidating information at our headquarters," says Sciortino.

It took 10 days for a typical facility to develop a financial statement that included occupancy rates, rent collected, food service costs and personnel changes. Bigger facilities took 13 days to compile information. It took until the 17th day for corporate accountants to get a real financial summary. Compiling the results from all locations sometimes took as long as 60 days.

Sciortino wanted to lay down an IT infrastructure and put ERP on top of it. The goal was to streamline the finan-

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cial process and give what he calls transparency to operations. "I want the executive chefs to know what the food cost is every day, every week," said Sciortino. "And I don't want them to have to sit at the terminal waiting for this information."

Sciortino's IT choice was a VPN using appliances from Nokia Corp. pre-configured with Check Point Software Technologies' security software. "We went the appliance route because we are concerned about security, and dial-up isn't reliable enough," said Sciortino. He also didn't want to load a bunch of Windows NT servers with Check Point software that would require IT personnel at each site to administer.

Now Sciortino drops a team of consultants into a new location — the senior-living market is booming — and users are up and running in three to five days. "We're able to save time getting financial information to people who need it," says Sciortino, who believes the system will be instrumental in quickly integrating new facility acquisitions.

Now, if only we had something as tangible to produce transparency and simplicity for the president's effort to curb corporate excess. ▶

**PAUL DONNELLY**

## H-1B Is Just Another Gov't. Subsidy

**D**ESPITE big layoffs among IT workers and post-Sept. 11 concerns over the immigration system, advocates of H-1B visas aren't going away. Indeed, IT employers are lying low, hoping to quietly persuade Congress next year to permanently raise the annual H-1B visa limit above 65,000. And why not? Like most politically connected industries, IT employers have friends in Washington who are arguing to expand what is in truth a government subsidy.

Take the Cato Institute, supposedly a small-government, antiregulation, free-market advocate, which for 10 years has opposed deregulating employment-based immigration. Buying green cards for new hires is a "tax," it argues, so Cato wants a permanent, massive, over-regulated subsidy instead.

Meanwhile, IT employers explain

that H-1B holders are a "minor league," in ITAA President Harris Miller's words — a try-before-you-buy approach, like Major League Baseball's farm teams. But Nobel economist Milton Friedman scoffs at the idea of the government stocking a farm system for the likes of Microsoft and Intel. "There is no doubt," he says, "that the [H-1B] program is a benefit to their employers, enabling them to get workers at a lower wage, and to that extent, it is a subsidy."

From free-market thinker Friedman, those are devastating words. The H-1B program is a subsidy that distorts the job market for IT talent. (But watch for hilarious letters from libertarians explaining how Friedman, a contributor to *Free Minds and Free Markets*, doesn't know a free lunch when he sees one.)



PAUL DONNELLY writes about immigration and citizenship. Contact him at pauldonnelly@mindspring.com.

Two years ago, I participated in a National Academy of Sciences hearing about IT workforce needs. After the ostensible libertarian in the room, former Cato economist Steve Moore, laid out his case for permanently recruiting foreign talent, the panel's economist called his bluff: "So, there is no argument for a temporary visa, then?" Moore did a double take before stammering, "Well,

this is one of those wink-and-a-nod programs. Everybody expects most of these workers to stay."

When the government supplies non-U.S. workers to an industry, that's a subsidy. When those workers accept minor-league wages, that's a big subsidy. When those outsiders want a benefit that can be supplied only by the government, like a green card, even

regulations intended to protect U.S. workers can skew the labor market against citizens. American workers won't support a minor league that runs against their interests, and winks and nods don't fool them.

Meanwhile, unions and IT professionals risk getting suckered (again) into supporting irrelevant training programs as a trade-off for H-1Bs. But the more that's loaded onto the H-1B approach, the bigger the subsidy gets.

Let's face it: IT lobbyists ill serve the industry by perpetuating the failed regulations of the H-1B and green-card programs, which could be replaced with a market system that would deliver green cards as fast as they're paid for. But laying off thousands of U.S. citizens and green-card holders while retaining "temporary" foreign workers adds fuel to a growing anger. So call the H-1B visa what it is: a subsidy that runs counter to the real interests of both IT workers and free-market thinkers. ▶

## READERS' LETTERS

### Let's Focus on Bugs

**T**HE FINDING by the National Institute of Standards and Technology that software bugs cost nearly \$60 billion annually and that those costs could be reduced by \$22.5 billion via the application of consistent improvements in software testing processes shows that it's time to adjust our priorities [QuickLink: 30997]. With money tight, building ways to recover at least part of that amount is more important than continuing to rush more features into production. Unfortunately, I don't see that happening. I instead see some large software vendors continuing to promote self-serving legislation like UCITA, which would shift even more of that \$60 billion onto the backs of consumers.

Users should not only stress improvements in their own testing practices, but also send a clear message to vendors about the unacceptability of shoddy or buggy products. To help facilitate building stronger quality protections into their vendor agreements, users

should work hard to send onerous attempts at cost-shifting like UCITA back to the drawing board.

**Bruce Barnes**  
President, Bold Vision LLC  
Dublin, Ohio

I'M NOT an application developer, but as the owner of a small technology consulting firm, I read the article "Users Losing Billions Due to Bugs" with great interest. There's much to be said for eliminating bugs from software, and I applaud the developers who strive to make that happen. However, in my career, I have seen many things attributed to buggy software that simply are not bugs: poorly trained users attempting to force an application to do something it was not designed to do; organizations unwilling to pony up the dollars it takes to properly install and configure large-scale applications or even operating systems; companies ignoring manufacturers' recommendations for installation and configuration. These situations lead to users who are unhappy with the way applications

work; hence, it's a bug.

**Steven J. Kopischke**  
Owner and chief consultant  
Ichthys LLC  
Green Bay, Wis.

### Stick With ECC Memory

**I**N YOUR ARTICLE "Xserve Grabs the Spotlight" [QuickLink: 30624], you quote people saying that the use of non-ECC (in this case DDR) memory is worth "the extra savings and increased speed." This is a dangerous statement. When it comes to speed, there's no practical difference between the two, and many benchmarks confirm this. As for perceived savings, on July 1, I found a price of \$49.49 for 256MB of non-ECC memory, and \$71.09 for ECC. Memory errors that go undetected and their later troubleshooting cost much more than the difference of \$21.60 per 256MB. That's why non-ECC memory doesn't belong in a corporate environment. I will keep advising companies I work with not to use any machine that uses non-ECC memory.

**Zoran Cvijetic**  
San Pedro, Calif.

### What's in It for Others?

**I**T'S NICE TO SEE people taking time to volunteer, and corporate America should encourage it. However, I was disappointed to see that for the most part, your article focused on the question of "What's in it for me?" [QuickLink: 30638] Volunteer work isn't really about finding a job or improving your résumé or increasing your financial worth. It's about helping people and organizations that do good. The rewards should be the work itself and the self-satisfaction that comes from giving.

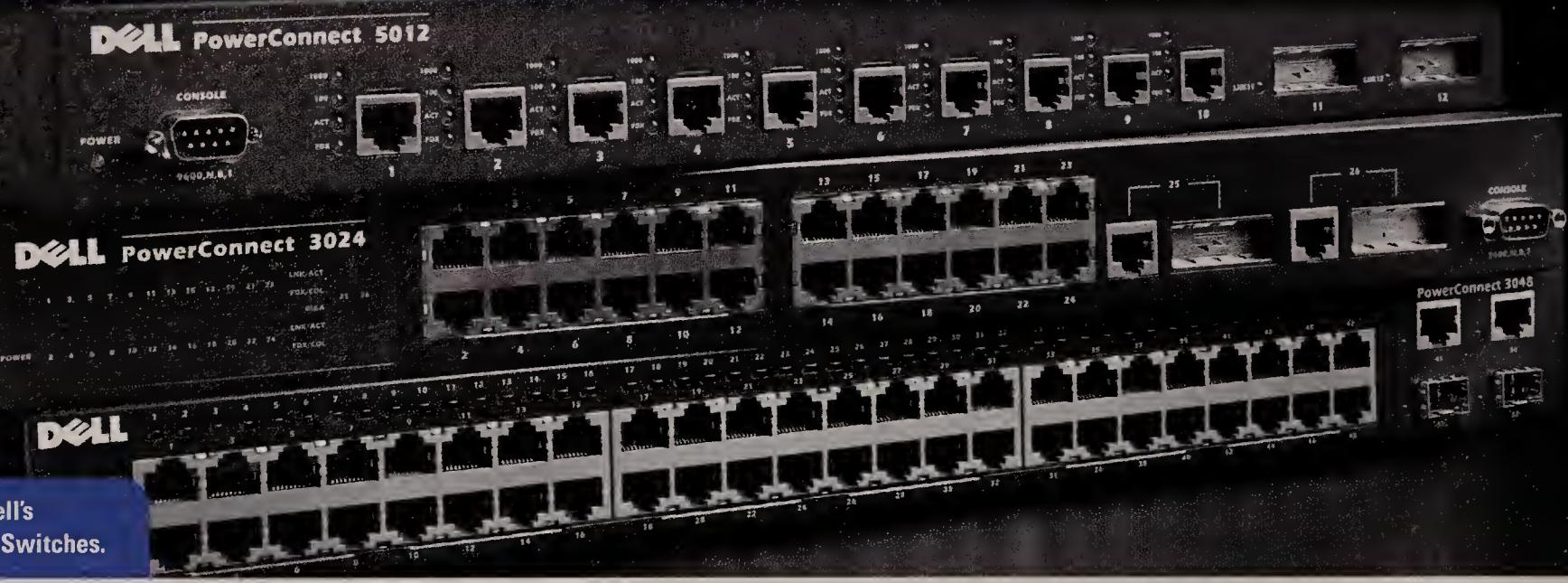
**Don Greb**  
Pittsburgh

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# TECHNOLOGY

## THIS WEEK

### LAYING FOUNDATIONS FOR WEB SERVICES

Building Web services on a firm foundation requires a service-oriented architecture, clean XML data and well-defined business processes. **PAGE 30**



### PORTAL TO INTEGRATION

Johnson Controls' John Waraniak (left) uses a collaboration exchange through the company's corporate portal to integrate applications from outside suppliers. **PAGE 32**

### PGP UNCERTAINTY

Pretty Good Privacy, which gained cult status in the early '90s as the first almost-uncrackable freeware encryption program, may fade from use because the software's vendor decided to pull the plug on it earlier this year. **PAGE 33**

### FUTURE WATCH

Computer scientists are increasingly looking to biology for ideas. Some are inventing ways to compute using a method that looks a lot like evolution. **PAGE 34**

### QUICKSTUDY

Unified messaging is the term for a system for accessing e-mail, voice and fax messages through a single common interface. **PAGE 35**

### SECURITY JOURNAL

A continuing staff shortage has Mathias Thurman fine-tuning the intrusion-detection system to reduce false alarms — and his workload. **PAGE 36**

NICHOLAS PETRELEY

## Free Porn Solution

**N**O, THIS IS NOT AN OFFER for a complimentary aphrodisiac drink. But now that I have your attention, I'd like to recommend a cheap and easy way to block unwanted and dangerous Internet content.

By now, almost everyone realizes that when you give your users access to porn sites, software downloads, and other Internet temptations, it can cost you more than lost productivity. I don't know of any solution that offers perfect protection, but there are many free software packages that will get you within spitting distance.

Here's the combination I typically recommend. Start with Linux, add IP Tables ([www.iptables.org](http://www.iptables.org)) firewall rules with the help of the IP Tables configuration tool gShield (<http://muse.linuxmafia.org/gshield.html>). Then mix in a Web proxy and cache called Squid ([www.squid-cache.org](http://www.squid-cache.org)) with the filtering proxy DansGuardian. You can block viruses, Trojan horses and other potentially dangerous e-mails with Anomy ([mailtools.anomy.net](http://mailtools.anomy.net)). Add SpamAssassin to kill off that last bit of unwanted content.

You can configure these Linux-based Internet gateways as your firewalls or just put them behind your current firewalls. The Squid proxy server adds a level of protection by letting users browse the Web without giving them direct access to the Internet, but that's not why I recommend it. We're after its performance-enhancing Web cache.

The Squid cache is especially useful if you have multiple pipes to the Internet, such as a T1, a T3 and a satellite, because multiple Squid caching servers can cooperate with one another. You can set up your Squid caches so that if your T1 line goes down, the proxy for that line will automatically redirect requests to one of the other proxies, such as the one connected to the T3. It may seem redundant to daisy chain DansGuardian into this mix, since DansGuardian is also a proxy. But DansGuardian adds intelligent content filtering that the Squid cache lacks, and you get this feature at very little performance cost in added latency.

The pearl in DansGuardian is that it examines everything that passes through the proxy, not just URLs. You can define custom search expressions that check for combinations of words within a Web page, and DansGuardian will block any pages with matching content. If you choose your search expressions carefully, you can mini-

mize false positives. That way, your users won't be able to reach porn sites, but they'll still be able to read about cockatiels or pussywillows. You can also use DansGuardian to block URLs based on search expressions, filter sites by IP addresses, and stop downloads of files matched by Multipurpose Internet Mail Extension type or file extension. If you're really paranoid, just block all compressed files and executables, and that will bring all downloading of unapproved content to a screeching halt. If that presents a problem for your most trusted users, you can set up DansGuardian to let only those users through.

The last challenge is to prevent anyone from bypassing these safeguards.

First, configure Squid to reject all client IP addresses except its own so only DansGuardian will have permission to access the Squid cache. Then configure DansGuardian to require password authentication, or configure your Linux gateway as a transparent proxy. The latter technique makes individual user authentication impossible, but it automatically forces all outgoing Web requests to pass through DansGuardian. The added benefit is that you don't have to configure anyone's browser to access the proxy.

Depending on how you configure your firewall, you may also have to use IP Tables to prevent users from accessing a proxy outside your firewall. IP Tables can be difficult to grasp, but this is where gShield comes to the rescue. There's nothing fancy

about gShield, but once you learn it, you'll be able to set up any new Linux firewall in minutes.

The Anomy e-mail filter can use external virus checkers to disinfect incoming attachments. But if all you need to do is make your mail safe for clients like Microsoft Outlook, Anomy sanitizes even the subtle e-mail exploits. Finally, SpamAssassin catches a phenomenal 99% of spam for my domains. I personally use it with the commercial mail server CommuniGate Pro ([www.stalker.com](http://www.stalker.com)), but it works with just about any e-mail server. □



NICHOLAS PETRELEY is a computer consultant and author in Hayward, Calif. He can be reached at [nicholas@petreley.com](mailto:nicholas@petreley.com).

# INTEGRATION IS ONCE AGAIN A POLITICAL ISSUE.

USA PATRIOT ACT

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## THE STRAIGHT GOODS ON SOFTWARE INTEGRATION.

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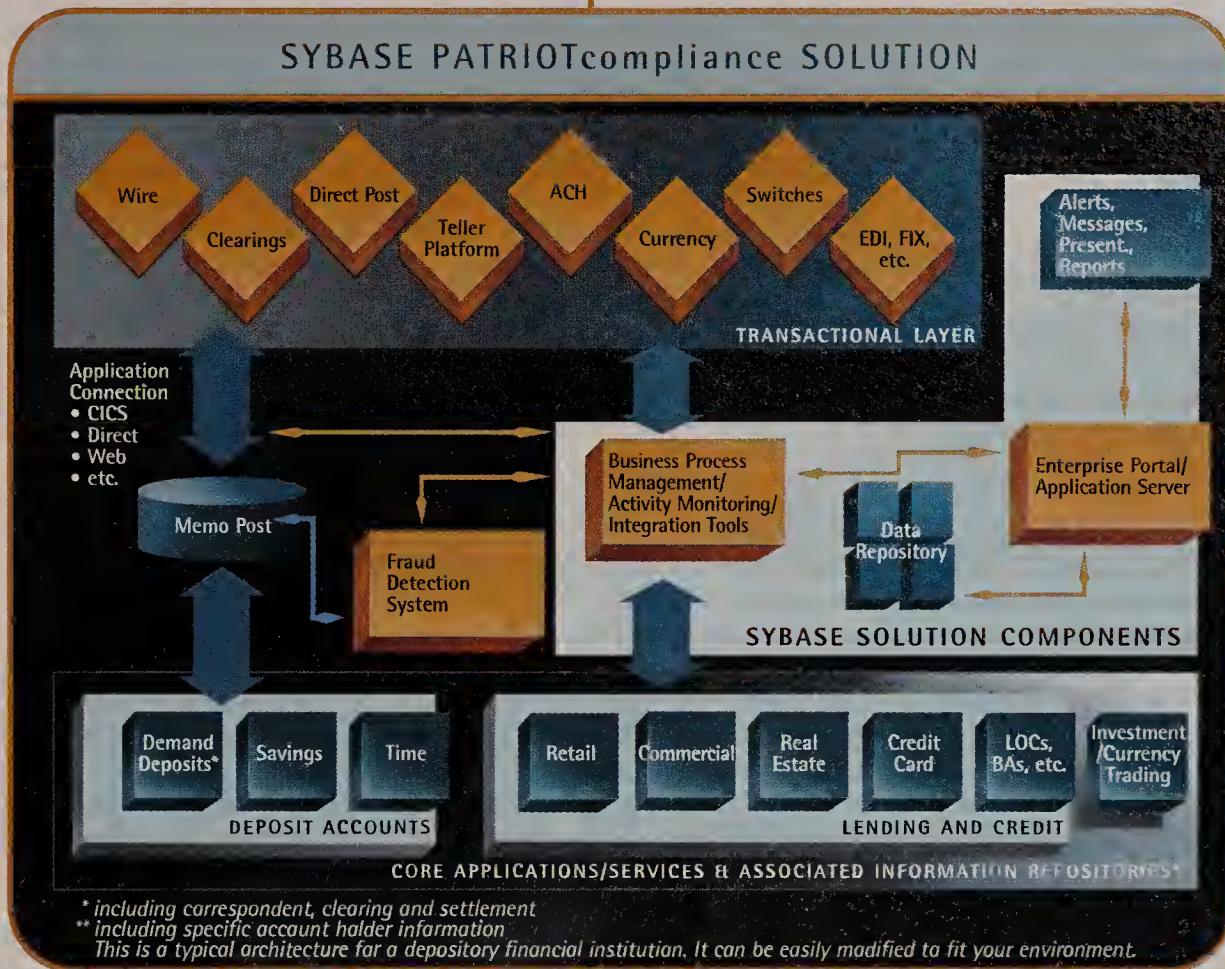
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so you can quickly connect applications to other agencies or other financial institutions.

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The USA PATRIOT Act contains strong measures to prevent, detect and prosecute terrorism and international money laundering, greatly expanding the breadth and depth of the old laws. Broadly stated, the act requires that financial institutions know their customers and, to the greatest extent possible, their customers' customers. Compliance for bankers and securities dealers is required by October 2002. Non-compliance could involve costly civil and criminal penalties.

# TECHNOLOGY

**S**ERVICE-ORIENTED architectures hold out the promise of reinventing IT as we know it, according to proponents of Web services.

With Web services standards such as Simple Object Access Protocol (SOAP) for messaging and Web Services Description Language (WSDL) to identify the content of a SOAP message, users are dreaming up ways to unlock information formerly trapped in legacy systems and share it across their entire IT infrastructures.

Presentation, data and applications will be separated into easy-to-distribute, easy-to-recombine objects, allowing companies to break free of many of the application development restraints they struggled with in the past.

Yet the service-oriented model comes with a daunting challenge. Namely, if Web services are going to change how information is passed and processed in back-end systems, then back-end systems will have to change as well.

Companies such as New York-based insurance firm American International Group Inc. (AIG) and British agricultural giant Associated British Nutrition & Agri-products (ABNA) have undertaken projects they believe will make them Web services-ready in the future.

## Needed: Real-time Data

At AIG, Bob Garzotto, chief technology officer for the company's financial services division, has been overseeing the creation of a next-generation data warehouse that uses SOAP as a transport envelope. Garzotto says the real-time nature of the applications that will take advantage of Web services requires that they have accurate, real-time data.

AIG tapped Ascential Software Corp. in Westboro, Mass., to create an enterprise data collection model that transforms all data into easily digestible chunks of XML and connects multiple targets and sources rather than working in a point-to-point fashion.

Using IBM's MQSeries messaging middleware, data from AIG's source systems will feed into Ascential's extract, transform and load (ETL) engine. The files will then be validated, cleansed and compared to previously cached files for consistency. The ETL engine will then generate a flat XML version of the data.

Afterward, the data will be converted to conform to the International Standards Organization's ISO 15022 XML standard so AIG can exchange it with other financial services companies.

"Initially, it's going to take some time to build out the instrument coverage and the messaging structure, but the data will be in a form that any of our users can work with," Garzotto says. "It will allow us eventually to embed this information into a Web services application."

The project started in April, with the first pilot deployment scheduled for September. Garzotto estimates that it will take two to three years to implement the system inside all of AIG's business units.

Just as AIG plans to enable its Web services development with a uniform data model, ABNA intends to do the same with a uniform messaging model.

In April, ABNA rolled out a uniform messaging system from Sonic Software Corp. in Bedford, Mass. Mysia Benford, IT director at ABNA, says the system

will allow the company to get away from Electronic Data Interchange messaging with its trading partners. With the new system, XML messages received from an outside source will be disseminated within ABNA. The company had been using a Microsoft BizTalk-based trading hub.

"We wanted to untie our messaging from any particular application vendor," says Benford. "If you're working application-to-application, it requires the applications to handle assurance and security. It shouldn't be there; it should be in the messaging layer." Now the SonicXQ enterprise service bus will handle the message delivery and secure transport, leaving the applications to perform their primary functions.

Gartner Inc. analyst Daryl Plummer says that in a service-oriented architecture, applications need to be separated from presentation and delivery. "It's about allowing a developer to get things done without having to get into the complexity of it all," he says.

The ultimate goal of Web services is to crumble the IT silos in a given company, and some companies are moving steadily toward that goal.

Erik Sargent, a Web applications architect at Providence Health System, a \$3.2 billion hospital consortium in Seattle, has been busily constructing a service-oriented architecture this year. Using a Web services management tool from Redwood City, Calif.-based Infravio Inc., Sargent's development teams have been able to link a user profile management application written using Java servlets with a Web page and credit card service written using Microsoft Corp.'s .Net framework.

"Basically, you replace database calls with Web services calls," he says.

Providence is currently using the tool for its events registration. If an event requires credit card payment, the Infravio tool grabs that payment information, wraps it in WSDL and sends it in a SOAP envelope to the credit card service and profile manager database. Since each action exists as a distributable chunk of data, that information will also be sent to Providence's accounting division.

"The key is to get something in the middle to orchestrate everything," Sargent says. "The problem

A service-oriented architecture, clean XML data and better-defined business processes are basic requirements for bringing Web services behind corporate firewalls. By Michael Meehan

# Web Services: Laying the Foundation

# TECHNOLOGY

we were having was that Microsoft really didn't do anything about the Java, and the Java vendors didn't really do anything about the Microsoft platform."

According to Sargent, SOAP/WSDL objects enable the Microsoft and Java applications to share information. Without asking developers to change a line of code, the breadth of those applications has been dramatically increased.

But Providence is far from done. Sargent says the ability to swap data between disparate back-end systems will play a significant role in the hospital consortium's efforts to comply with Health Insurance Portability and Accountability Act regulations.

"We'll need to be able to show who looked at a record, when and why," Sargent says. "Using a Web services model, we'll be able to keep those records constantly updated." To do that, Providence will need to unlock a legacy Cobol-based administration system called Mumps that runs on Unix.

"It doesn't talk to anything," Sargent says.

He says Web services will be used as a distribution method for information headed in and out of the Mumps system.

Common Object Request Broker Architecture (CORBA) objects will be used to pull data out of Mumps. The CORBA objects will then be fed into a Java application that will provide business rules around that data. At that point, the Infravio manager will transform the objects into SOAP objects for widespread distribution.

## Barriers Come Down

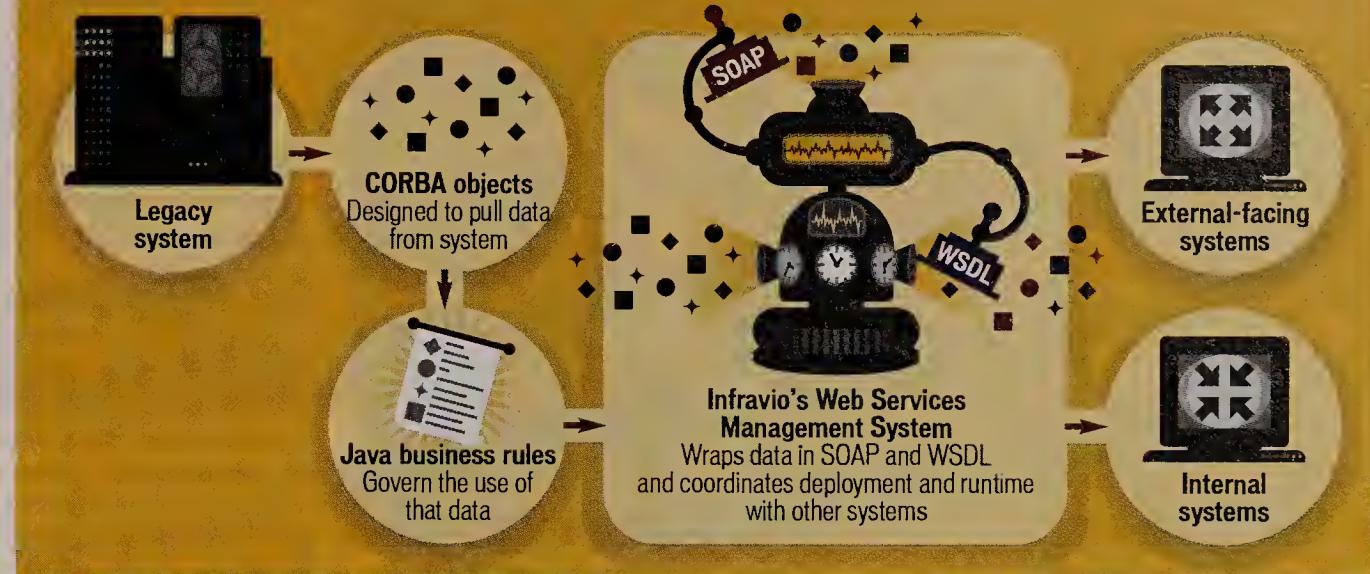
Toby Redshaw, CTO at wireless device and chip manufacturer Motorola Inc. in Schaumburg, Ill., says his company is also forging ahead with a service-oriented architecture model. "It gives us a chance to dig into the guts of manufacturing processes," he says. "Barriers we've had forever are going to come down."

Motorola has turned to its enterprise application integration vendor, webMethods Inc. in Fairfax, Va., to help wrap manufacturing information in SOAP objects that can then be distributed to other divi-

## Routing Legacy Data to Web Services at Providence

Providence Health System has a legacy Cobol system that contains the primary administrative and medical records for its member hospitals. Due to pending federal regulations, much of that information needs to be exposed in real time.

Here's how Providence intends to tackle the problem:



sions using webMethods' integration broker.

Redshaw stressed the need to create a model for what the enterprise architecture will look like before Web services development begins. He also says that as Web services make data and applications easier to distribute, companies will need to beef up their monitoring capabilities.

"You have to have application and hardware visibility across your entire network," Redshaw says.

That kind of accessibility is particularly critical for systems at the heart of the enterprise. The Denver-based trust services division of Fiserv Inc. relies on two Unix servers for much of the financial tracking and tax reporting it performs as a back-office operations provider to financial institutions.

Both Unix servers run trust accounting software from SunGard Data Systems Inc. in Wayne, Pa. Greg Bakke, Fiserv's director of systems development, says unlocking the servers was crucial to creating a service-oriented architecture.

Bakke found his key in the form of screen-scraping. Using tools from SilverStream Software Inc. in Billerica, Mass., Bakke's staff has been able to pull information from the fields on the green-screen terminals that interface with the SunGard system. It's then transformed into XML data objects that are fed to the SilverStream Java application server Fiserv uses.

"You have to script that entire function and create the workflow, but it's a way to get components that I can then wrap in Web services," Bakke says.

He chose screen-scraping for the job because there didn't seem to be an easy programmatic way to unlock the system.

"We're very much defining the infrastructure we need for a service-oriented architecture," Bakke says. "Every new product we buy now, we look to see if there's a way of exposing things as Web services so that we can reuse them."

Plummer agrees that users will need to think through how their systems will consume and process Web services to make the technology work to its maximum benefit. Although some people loosely

define Web services as any business service using Internet transport or XML data, Plummer recommends that users demand more.

"If anybody has a Web services tool and it does not use SOAP, WSDL or UDDI, kick them to the curb," he says. "That's not a true Web services tool."

## SECURING WEB SERVICES

Read why performance and security continue to top the list of user concerns about Web services. **QuickLink: 31369**

View a checklist of items to consider when preparing to secure Web services.

**QuickLink: 31366**  
[www.computerworld.com](http://www.computerworld.com)

## Building the Basics

■ Concentrate on application integration rather than collaborative efforts with trading partners. A company that has streamlined its own processes will likely find it easier to collaborate with others in the future.

■ Approach Web services security in a systematic fashion. Pay particular attention to identity management.

■ Choose a companywide XML data standard and stick with it. Quality data will be a key in building a service-oriented architecture.

■ Don't assume you have the bandwidth to support a service-oriented architecture. Monitor your network and systems to make sure Web services don't create new bottlenecks or prohibitively slow the speed at which you do business.

■ Tactical projects need to fit into a bigger picture. Avoid building new stovepipes.

■ Vendor responsibilities likely will change with the advent of Web services. Make sure you understand those changes and build them into the performance clauses of your contracts.

■ Avoid complicated workflow routines reliant upon Web services, because the tools to properly orchestrate those routines haven't yet been built.

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world's major automakers each year.

Waraniak says product ideas must be analyzed in the early design stages by those most affected to avoid costly mistakes. Fixing a problem during engineering design, for example, costs one-tenth of what it would cost once a product reaches the prototype stage. If the product reaches the field, the cost can easily top 1,000 times what it would have taken to correct the problem on the assembly line. Waraniak says the collaboration work at JCI has saved the company a whopping 80% on research and development investments.

### How the Technology Works

"Sixty percent of our work is engineer-to-order. We conceive and then we build," he says. "That means we depend on tribal knowledge for insight into the product and the process for making it."

Throw in a multitiered supply chain with countless suppliers, and that tribal knowledge wouldn't be possible without automation, including the integration of key applications as part of the collaboration process, Waraniak says. That's why the company was an early proponent of the automotive industry's Covisint business-to-business online exchange. It's also why JCI began work on its own "business place" in January last year using technology from MatrixOne Inc. in Westford, Mass. This private exchange acts as a portal that masks integration hassles by preselecting applications that work with those in use on the exchange.

Outside suppliers that access JCI's exchange run a version of MatrixOne's software on their sites. The software has extensions to the tools that a supplier might use. For example, a supplier can use computer-aided design and manufacturing data on the JCI exchange in the application it knows best, such as San Rafael, Calif.-based AutoDesk Inc.'s AutoCAD software with Catera 5, while still benefiting from collaboration with engineers that use different software. MatrixOne's software, which runs on each collaborator's location, takes care of the differences between users' applications.

Beyond engineering design, JCI is using MatrixOne for its manufacturing supply chain, where users inside and outside of JCI don't have to concern themselves with the source of, say, enterprise resource planning (ERP) information sent from a J.D. Edwards application to an SAP program. For example, JCI builds the cockpit for the Jeep Liberty using 35 suppliers, all of which can work with data from one another's various inventory applications

**"COLLABORATION CONNECTS blue sky with solid ground," according to John Waraniak, executive director of e-speed at Johnson Controls Inc. in Milwaukee.**

# PORTAL MASKS INTEGRATION COMPLEXITY

Johnson Controls has cut product costs by \$20 million with a collaboration portal that integrates supplier applications.

By Mark Hall

**C**OLLABORATE OR DIE. That's the unspoken motto at Johnson Controls Inc.

It permeates nearly everything from product design to delivery within the company's automotive supply division. So it comes as no surprise that Johnson Controls (JCI) is well along in an application integration project that has turned collaboration into something far more than a motto.

### CASE STUDY

"Collaboration connects blue sky with solid ground," says John Waraniak, executive director of e-speed at the Milwaukee manufacturer. The automotive division where he works delivered \$13.6 billion of JCI's \$18.4 billion in revenue last year and is a Tier 1 supplier of car and truck cockpits, which include the dashboard, seats and other interior parts. JCI builds almost half of the cockpits used in the approximately 50 million vehicles manufactured by the

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SOURCES: JOHNSON CONTROLS INC., HOOVERS.COM

to gauge when they will need to supply parts to JCI's manufacturing floor. "We want to provide visibility all through our supply chain," Waraniak says.

Few companies achieve the kind of visibility JCI does, says Kevin Prouty, an analyst at AMR Research Inc. in Boston. And it's paying dividends. "It's one of the few larger automotive suppliers [that has] grown margins during these down times," he says.

However, Prouty says he doesn't believe MatrixOne will solve all of JCI's future integration problems. "Just when you think that you've built the last adapter you'll ever need, you acquire a new company with a different legacy ERP system," he says.

### What It Delivers

For Waraniak, the progress is tangible. Collaboration on 2003 and 2004 model-year automobiles has yielded gains in efficiency. He says engineers have used collaborative online design to reduce costs by \$20 million in JCI's "core products portfolio," primarily by reducing the number of discrete parts in each cockpit component.

Collaboration cuts time out of component design, Waraniak says. What once took days as overnight express packages went back and forth takes "a few hours on the Web," he says, which is critical when there are as many as 5,000 distinct parts in a vehicle.

Engineers also save time using the exchange by sharing drawings, revising calculations and exchanging critical feedback on ongoing work. "Typically, engineers spend half their time engineering and the rest of the time they are looking for information," Waraniak says. "With the exchange, it's all brought together for them." ▶

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## TECHNOLOGY

# PGP ON SHAKY GROUND

The standard for Web encryption programs is being abandoned by its vendor, leaving plenty of questions and problems for users.

**BY DEBORAH RADCLIFF**

**B**AD THINGS DO HAPPEN TO GOOD code. So learned Phil Zimmermann, author of Pretty Good Privacy (PGP), which in the early 1990s became the de facto standard for cryptology development on the Internet, according to analysts and user groups.

While working with human rights advocates in 1991, Zimmermann released his powerful encryption, signing and authentication free-ware, which did away with the need for third-party key authorities to issue and manage the keys that lock and unlock data.

In fact, the mathematical encryption algorithm was so good that Zimmermann nearly went to jail after one of his associates posted the algorithm's source code on the Web and it caught the attention of the U.S. Customs Service. The federal government wasn't happy that such a powerful secrecy tool had become available to anyone who wanted it and had the technical skills to use the complex program. It took a three-year legal battle before Zimmermann

was eventually cleared of violating the International Traffic in Arms Regulations for exporting munitions.

Two years ago, after an unsuccessful attempt to make money on PGP on his own, Zimmermann sold PGP to Network Associates Inc. (NAI) in Santa Clara, Calif. NAI tried to integrate and market PGP as part of an all-in-one firewall, virtual private network and peer-to-peer encryption appliance but was

unable to sell the product, says Ryan McGee, group product manager at McAfee Security, a division of NAI. Nor could the company find another vendor to buy PGP. So in February, it pulled support for the product.

"As Network Associates drops PGP, it drops the ease of use and high level of integration PGP achieved in the desktop computing environment," says Julian Koh, a network engineer at Northwestern University in Evanston, Ill., who uses PGP for file and mail encryption inside Northwestern's network. "They've also dropped support for that product. So if someone's using the latest version of PGP on XP and they install a Microsoft service pack for XP, it could break

## PRIVACY

their PGP. And there's not going to be any update from Network Associates to patch PGP."

Because of PGP's history as free software, the number of companies that have installed it is unknown. But large organizations such as Lockheed Martin Corp. use PGP on a limited basis for critical communications and file encryption, according to a spokesperson at the Bethesda, Md.-based company. And PGP is also being used in a lot of Web site scripting, says Adam Back, a security consultant in Montreal who has used PGP for eight years.

German businesses are big users of PGP, according to Werner Koch, lead developer of GNU Privacy Guard (GNUPG) in Dusseldorf, Germany. Many of those PGP installations in Germany are being replaced with GNUPG, for which Koch's small business will make its money from support fees. The code and concept of GNUPG is closely related to that of PGP.

"In the past year, a lot of companies have installed PGP for their e-mail encryption because of demands from their suppliers to encrypt business-to-business communications," Koch says. "Now those companies have real problems, because there are no more patches and updates for the product. So some of these companies are removing their PGP software and asking if we can support GNUPG for them."

GNUPG is the first and strongest new form of PGP to step into the void left by NAI. GNUPG is working on a less complex interface, and installing its program is no more difficult than downloading any software, says Gary Kessler, a cryptography instructor at the SANS Institute in Bethesda, Md., and assistant professor of computer networking at Champlain College in Burlington, Vt., which houses a PGP key server.

PGP proponents also say that more variants will emerge from the open PGP standard. PGP remains attractive because prominent alternatives such as Secure Multipurpose Mail Extensions require third-party authorities to issue encryption keys, they say.

More PGP development "would make a profit motive for a company to step in and offer commercial support contracts for PGP," Kessler says. "For example, Eudora, which already has plug-ins for PGP, and HushMail, which supports PGP in its latest version, could start to offer support."

Kessler uses PGP by pushing a button on his Eudora e-mail program. But he can't send PGP-encrypted e-mail to many of his associates, because they don't have plug-ins for their e-mail programs. More PGP plug-ins to popular e-mail applications and services would introduce millions of users to PGP, which would also promote commercial support, Kessler says.

Will new open-source developments move fast enough to encourage commercial support for end users of PGP? "I'm sworn to secrecy, but I personally know people working on this problem, and I'm sure the void will be filled in six months," says Jon Callas, senior systems architect at a technology company in the San Francisco Bay area and a former PGP developer.

## WHAT IS PGP?

PGP is based on the public-key encryption method, which uses two keys: One is a public key that the user disseminates to anyone from whom he wants to receive a message; the other is a private key used to decrypt received messages. It's almost impossible to deduce the private key, even if you know the public key. But a difficulty with public-key systems is that you need to know the recipi-

ent's public key to encrypt a message for him.

Public-key cryptography is also called asymmetric encryption because it uses two keys instead of one (symmetric encryption).

Encrypting a message using PGP requires the PGP encryption package, which is available for free. The official repository is at MIT.

- Deborah Radcliff

## PRETTY GOOD RUN

For more on the history of PGP and some useful links, see our Web site: [www.computerworld.com](http://www.computerworld.com)



QuickLink: 31394

# Only the Strong Survive

**MELANIE MITCHELL**



**Position:**  
Research computer scientist

**Employer:**  
Santa Fe Institute, a New Mexico think tank specializing in emerging science

**Research interests:**  
Intelligent systems and machine learning, complex systems, evolutionary computation and artificial life

Melanie Mitchell says computer scientists and biologists can learn a lot from each other. She's studying how natural systems perform computation, and she's using her findings to develop new kinds of computational methods. Mitchell recently told Computerworld's Gary H. Anthes how we can solve some complex problems by letting systems evolve solutions through a process of natural selection.

## FUTURE WATCH

Is evolutionary computing beginning to move out of the academic realm? This whole field has really exploded recently. More and more people are using

evolutionary methods to do real-world applications. Examples are factory job scheduling, supply chain optimization and automatic design of things like circuits.

**What's driving this?** People have learned how to exploit these methods better, and more and more people are getting interested in biologically inspired methods in computer science. And we have the kind of computer power to really use these algorithms on a much larger scale. They are very computationally intensive, and a lot of people are now looking at genetic algorithms implemented on a parallel computer or some large network of computers.

**Is anything holding back even wider use of evolutionary computing?** People don't understand very well what characterizes problems that evolutionary methods work well on. That's an open problem. There's some intuition, but no real formal analysis.

**Nevertheless, what can you say about why this method is sometimes so effective?** More and more people in the

field of artificial intelligence are finding that if you want to create very complex computing systems that act intelligently or in lifelike ways, that's very difficult to engineer by hand. You have to let systems learn on their own. Evolutionary computing is one kind of machine learning; neural networks is another.

**You're doing research in co-evolutionary computing. How does that differ from**

**evolutionary computing?** In machine learning, the traditional way you get a system to do what you want is you come up with a fixed set of training examples — examples of the problem it's going to be faced with. Then you try the system out on the training examples, and if it gets the right answer, it gets credit, and if it gets the wrong answer, it gets punished.

But in co-evolution, you actually evolve the training examples, and they evolve to be increasingly challenging. So you try to evolve test cases; you are generating them dynamically. Manufacturing systems could lend themselves to this, because you might try to evolve situations that would break them because you are trying to make them as robust as possible.

**Will computer scientists continue to learn lessons from biologists?** Yes. Learning how biological systems process information will eventually lead to new kinds of computing systems. One of the problems in computer science right now is that the standard design for computing is very unifilike. Living systems have many relatively simple components, and each component does some simple thing, but col-

## ONLINE RESOURCES

• Melanie Mitchell's home page: [www.santafe.edu/~mm](http://www.santafe.edu/~mm)

• Evolving Cellular Automata group home page: [www.santafe.edu/~evca](http://www.santafe.edu/~evca)

• Papers about evolutionary computing: [www.santafe.edu/~mm/paper-abstracts.html](http://www.santafe.edu/~mm/paper-abstracts.html)

• The Genetic Algorithms Archive: [www.aic.nrl.navy.mil/galist/](http://www.aic.nrl.navy.mil/galist/)

lectively, the whole network of components computes very complicated things. That has a lot of advantages, such as it can be much faster and more robust.

**Can you give an example of such a system?** Scientists are understanding more and more about how the immune system is really an information, and in some ways a cognitive, system. So in computer security, you might do immune-system-like computation.

**Can biologists learn from computer scientists as well?** Absolutely. It cuts both ways. Computer scientists are thinking about information-processing in machines, and sometimes that gives rise to new ideas in biology. Computer science and biology are intimately connected. ▀

## Evolution via Genetic Algorithms

### HOW IT WORKS

Imagine a very complex problem — supply chain optimization, for example — in which a computer generates millions of trial solutions completely at random and then picks the one

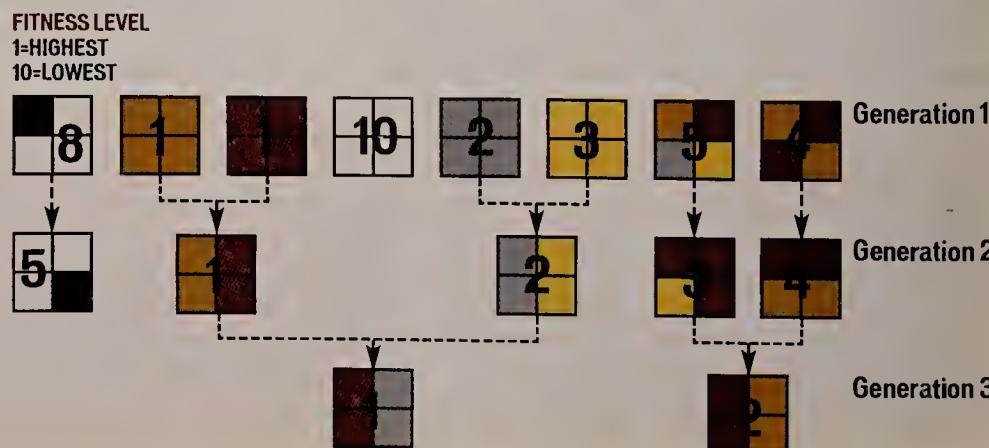
with the lowest cost. Such a trial-and-error approach isn't practical with big problems because there are just too many combinations of variables to try even a small fraction of them.

However, that's essentially what evolutionary computing does — but with one major difference. It converges on an answer by breeding better and better solutions from the most promising parents in each generation of trials. Here's Melanie Mitchell's explanation:

"Evolutionary algorithms start out with a randomly generated population of from 50 to 500 candidate solutions. At each time step, or generation, all the individuals are evaluated and assigned a number, called fitness. It's a measure of how good a solution it is. Then some percentage, usually between 20% and 80%, of the highest-fitness individuals get to reproduce."

"They reproduce two ways: by cross-over, where you take one part of one individual and some part of another individual and combine them; and by mutation, where you randomly change parts of an individual. The offspring are put into the next generation, and the whole process starts again."

— Gary H. Anthes



# TECHNOLOGY

# All Messages, All the Time, Anywhere

## DEFINITION

**Unified messaging** is the term for a system that provides access to e-mail, voice and fax messages through a single common interface, usually an e-mail client application.

BY JAMES COPE

**A**LTHOUGH different ways of communicating might help today's mobile workers stay in touch with business associates and family, having too many communications options can frustrate workers and diminish productivity. A simple but pervasive example is the use of two voice mail systems, one for the office and one for a mobile phone.

Add to this the incessant flow of paper documents from printers and fax machines, and it's no wonder that many information workers sense they've become victims of their technologies.

Part of the answer to the

## QUICK STUDY

vexing issue of managing multiple message delivery systems is routing messages, no matter what type, to the user's e-mail in-box. To do that, unified messaging vendors such as Avaya Inc. in Basking Ridge, N.J., Nortel Networks Ltd. in Brampton, Ontario, and Cisco Systems Inc. route message data to an e-mail server — Microsoft Exchange or Lotus Notes, for example — which

forwards the data to the user's e-mail client application.

In order to accommodate voice messages, the unified messaging vendor's system converts them to digital files that can be stored on a mail server or a user's hard drive like any other data file. Similarly, incoming faxes are collected by a fax server, converted to image files and sent on to the mail server. The mail server subsequently routes

voice and fax messages to the user's e-mail application, such as Microsoft Outlook or the Lotus Notes client application.

Assuming the user has audio drivers and a speaker or headphones, he can simply click the attachment to play the voice mail audio file. He can also click an attachment to review a fax on screen using his image-viewing application.

## Behind the Scenes

While the technology involved in unified messaging seems to beg for an all-IP approach instead of a separate private branch exchange (PBX) system for voice and an IP network for data, the reality is that most large companies still have PBX voice messaging systems that work just fine. And most companies aren't willing to replace something that works just fine.

Thus, network equipment vendors have been bridging the gap between traditional PBX corporate phone systems and existing data networks. The idea is to show voice messages in a user's e-mail in-box even though they may also be left on a PBX-based voice mail system.

How vendors approach building this bridge depends on what side of the river they started from. For example, the big North American PBX manufacturers, Avaya and Nortel, have worked to connect their PBX-based voice messaging systems to data networks. Cisco, which came from the data networking side with its IP-based switching and routing equipment, has reached out to interface its voice-over-IP unified messaging system with existing PBX systems.

Despite their different starting points, these and other vendors are now building

## Beyond the Single In-box

A single PC-based in-box for voice, fax and e-mail messages may be convenient enough for employees who work from a single office or who travel occasionally. But it just doesn't do the job for workers who alternate between different sites or are on the road three or four days a week.

As a result, there's been a growing interest in ways to access and control the flow of information through conventional and mobile telephones. So a mobile worker may, instead of accessing voice mail and e-mail over a dial-up connection, call his message box from a cell phone to retrieve both voice and text messages. A text-to-speech engine would read e-mail messages to the user.

The latest unified messaging systems enable end users to set rules for how an automated call agent handles incoming calls to a single phone number. The user can specify who gets through live and who goes to voice mail, based on their recorded name or caller ID.

Moreover, the user can instruct the agent to route calls to different phones during certain time periods — for example, all calls can be sent to the office phone on Mondays and Tuesdays, to a mobile phone on Wednesdays and Thursdays, and to a home phone on Fridays.

— James Cope

unified messaging systems that treat e-mail, voice, fax and even video as simply different forms of data. When it comes time to replace the old PBX-based voice mail system, it will just be put aside and the data network will take over the job. ▀

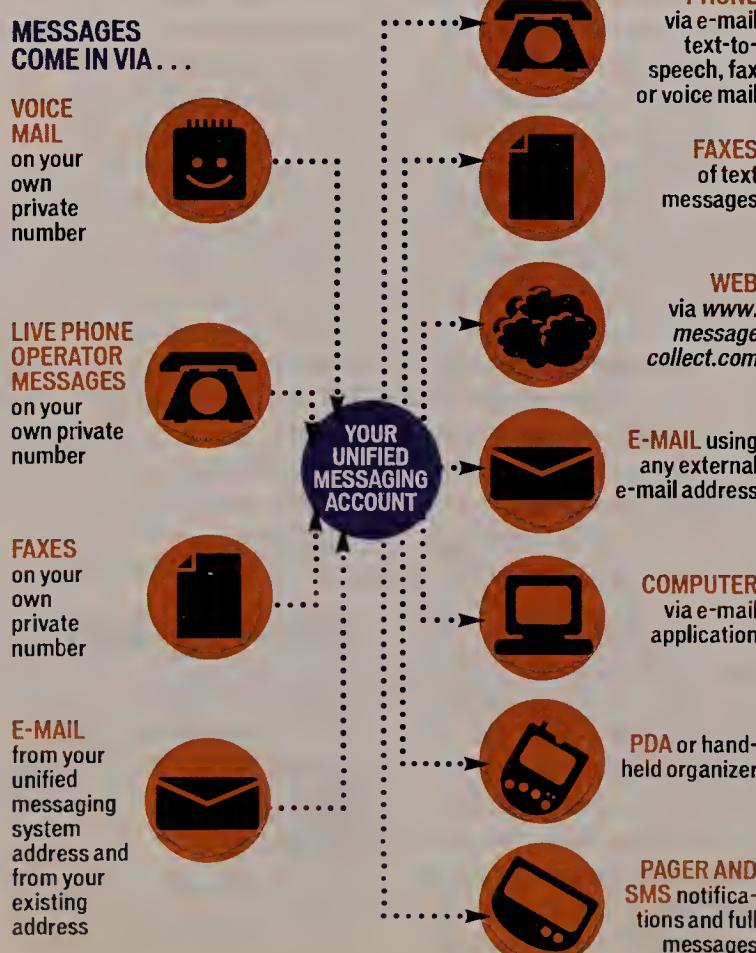
Cope is a Computerworld contributing writer. You can reach him at jc@jamescope.com.

## UNIFIED MESSAGING AS A SERVICE

Find out about one busy exec's experience using a messaging ASP.

QuickLink: 31195  
[www.computerworld.com](http://www.computerworld.com)

## How It Works



# TECHNOLOGY

# Recruiting Effort Draws 'Articulate Incompetents'

**As the search for security talent comes up short, Mathias tunes the IDS to reduce the monitoring workload. By Mathias Thurman**

IT'S BEEN ALMOST A month since I lost two security staffers, and I still haven't found replacements. Although we've found plenty of candidates, few have been truly qualified.

What's worse, the unqualified candidates have been getting through our screening process. I assumed that the recruiters we hired were filtering out candidates so that those who came in for an interview would at least be somewhat qualified for the job. They're not. I've interviewed about a dozen people, and only one was even remotely qualified.

The other candidates were either fresh out of school and had no experience or were what I call articulate incompetents. These "security professionals" could talk the talk but couldn't add a user to a Unix system if their lives depended on it.

If you're going to use recruiters to screen candidates, you need to provide them with a list of technical questions that anyone applying for the position should be able to answer. For example, a security engineer with Solaris experience should be able to describe the proper command to configure a network interface.

I'm now giving my recruiters a set of such questions with the correct answers. Armed with this resource, the recruiters should be able to filter out those who have good-looking résumés but lack practical experience. This should reduce

## SECURITY MANAGER'S JOURNAL

the time wasted interviewing bad candidates. But it won't solve the basic problem: Good candidates are difficult to find.

Meanwhile, my arrangement with the network operations center (NOC) staff to pick up some of the day-to-day administration tasks is going smoothly. They're handling our Tripwire and SecurID infrastructure, and so far, only a couple of Tripwire incidents needed my attention. Fortunately, those alerts were false positives.

### The Art of IDS Maintenance

I've been spending a considerable amount of time during the past few days tuning the three Snort intrusion-detection system (IDS) sensors. We deployed these sensors in northern California, the Southeast and the Midwest, and all are configured to watch our internal corporate LAN traffic. We've placed them on the network so they watch only the traffic in and out of the internal corporate firewalls. We also have Cisco IDS sensors that watch the external firewalls,

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Tuning an IDS is a very time-consuming and draining process.

but those have been tuned and are working properly. I manage them separately, but they all report to a central console.

Tuning an IDS is a very time-consuming and draining process. But it's also educational, because you become intimately familiar with how the network is configured and managed. By tuning the IDS engines, I've also gotten to know other individuals within the IT organization better.

The problem with tuning an IDS is that you don't want to filter out something that could be indicative of hacker activity. For example, because of the way our company monitors the network, we have an excessive amount of Simple Network Management Protocol (SNMP) traffic. But we also need to watch for several known SNMP exploits, so I don't want to configure my IDS engines to ignore SNMP traffic completely. The trick is to determine which traffic is legitimate and then place filters within the IDS software so that legitimate SNMP traffic won't trigger an alert but other SNMP traffic will.

In tuning our IDS, I've had to address dozens of these types of scenarios. Instant messaging traffic is another example. Normally, it's against most companies' policies to allow this type of activity. However, while investigating this traffic, I found that the technical support centers use it to communicate with customers. I can't just block this traffic completely, so I set up filters that disregard traffic from the tech-support network IP address range but pay attention to the rest of the network. Granted, instant messaging isn't a large security risk, but it is a violation of our policy.

Music-sharing programs are another big problem. Several programs allow users to find,

share and download music and full-length movies off the Internet. Using them is against our policy. So it came as a surprise when I discovered that over 60% of the total traffic at one of our remote locations was from music-sharing. To address this problem, I put in a change control that blocks this traffic at the firewall.

### Things to Know

To tune an IDS engine, you have to understand your network and the way it's managed, monitored and administered. And you have to know what applications employees are using, since the use of those applications might create false positives.

Some traffic can be dealt with technologically (blocking its access at the firewall), while other traffic can be dealt with administratively (contacting individuals or managers). Other traffic has to be tweaked and filtered so the IDS infrastructure is effective enough to issue alerts about real suspicious traffic while letting legitimate traffic pass.

Is this a completely reliable way to deal with these problems? Probably not. But because we're short-staffed, I have to adjust my environment so my entire day isn't consumed with responding to IDS alerts. Eventually, I'll train the NOC analysts to monitor the IDS engines. But for now, I need to give myself some breathing room and time to attend to other matters. ▶

### WHAT DO YOU THINK?

This week's journal is written by a real security manager, "Mathias Thurman," whose name and employer have been disguised for obvious reasons. Contact him at [mathias\\_thurman@yahoo.com](mailto:mathias_thurman@yahoo.com), or join the discussion in our forum.

QuickLink: [a1590](#)

To find a complete archive of our Security Manager's Journals, go online to [computerworld.com/secjournal](http://computerworld.com/secjournal)

## SECURITY LOG

### USER REVIEW

#### Tripwire Manager 3.0

Version 3 of Tripwire Manager, the central console for managing servers running IDS software from Tripwire Inc. in Portland, Ore., has some cool new features. My favorite is the ability to run a script when Tripwire detects a file change.

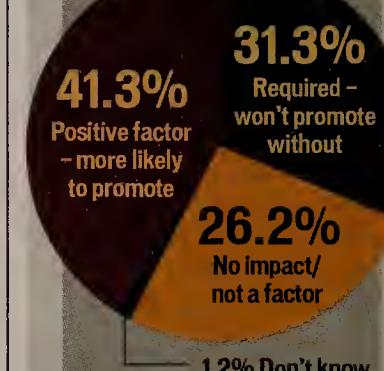
You can also group machines according to categories such as function or location, require administrators to enter their names and reasons for changes, and have multiple instances of Tripwire running on a single system to allow concurrent use.

Those features were enough to earn Tripwire Manager 3 a place in my security infrastructure.

- Mathias Thurman

### Certification Pays

The impact of Check Point Certified Security Engineer certification on promotions of network security personnel:



SOURCE: IDC TELEPHONE SURVEY OF 80 IT PROFESSIONALS IN VERTICAL INDUSTRIES, 2001

### Security Q&A Line

Got a security question? ITsecurity.com offers a free resource ([www.itsecurity.com/asktecs/asktecs.htm](http://www.itsecurity.com/asktecs/asktecs.htm)) that might provide the answer. The Security Clinic offers the expertise of more than 120 professionals who provide answers to questions posted at its Web site.

But don't expect them to help you configure that firewall: A spokesman says the experts won't answer questions that should be directed to a product support line.

# MANAGEMENT

## THIS WEEK

### PROJECT MANAGEMENT TO THE EXTREME

Some companies are turning to an emerging methodology called extreme project management, a radical approach whereby IT managers focus almost exclusively on the needs of end users. **PAGE 38**

### MAKING REALISTIC ROI CALCULATIONS

Even in today's cost-conscious climate, IT leaders rarely know what questions to ask when trying to determine returns on technology investments. That's why leaders such as Merrill Lynch's Marvin Balliet (left) use a template of questions they can continuously ask to keep projects on track. **PAGE 44**

### JOIN THE CTO CLUB

Outside of a few MBA programs, schools don't offer curricula that teach IT professionals how to become chief technology officers. Regional CTO clubs can help fill that void for aspiring technology managers and CTOs who want to network with their peers. **PAGE 46**

### CAREER ADVISER

Fran Quittel offers advice to a business analyst who wants to work on an e-commerce initiative, an IT/finance professional who wants to know whether she should expect any improvements in the New York job market and an application developer who's considering a switch to systems integration and middle-tier development. **PAGE 47**



JOHN BERRY

## Strategic Measurement

**W**HEN ARE YOU supposed to build an economic value model to justify a proposed information technology investment? Whenever the CFO or CIO asks you to. But a more subtle answer rests in a decision framework that can enlighten measurement practices by the nature of the IT investment a company wants to make. This framework suggests that rigorous measurement isn't so important when investing in

certain kinds of technology, which may be seen as heresy given today's urge to measure.

When seeking approval for an IT investment, technology professionals should be as interested in knowing *when* to measure as in *how* to measure. We know that the company's culture and financial condition, plus the CFO's predisposition, can determine measurement practices. So, too, should the nature and class of the technology.

Here's the simple argument: Some IT is needed to run the company, and it enables the deployment of more strategic kinds of technology. Is it really necessary to even attempt to model the internal rate of return, discounted cash flow or even the payback of, say, a WAN or storage investment? A rigorous financial model might determine *when* in a company's investment cycle such an investment can be made, but the model should have little bearing on *if* it's to be made. Clearly, the investment should be made since this kind of IT supports more strategic technologies.

Consider what I call the economic value depiction pyramid. It helps answer this: When is it OK to confine a business case to a one-page summary or defense of the investment, rather than a detailed measurement exercise in which each cost and benefit metric — however arrived at — decorates an ROI calculation? Consider network-attached storage. Let's say your company is adding three applications and a couple of new data stores, and e-commerce traffic is picking up. The sheer volume of information seems unrelenting. As costly as new storage technologies are, would a payback period calculation do any more to secure the investment than if you presented that list of company realities?

At the bottom of the pyramid are the infrastructure-support kinds of IT: networks, storage, operating systems, servers and databases. Moving up the pyramid, we find more support types of IT: systems-of-record applications — accounting, budget-

ing, inventory — and desktop and collaboration software. From this level, we move into the "magic kingdom" of strategic IT: customer relationship management, supply chain, field-force automation — anything that can give a company a competitive advantage.

As we move further up the pyramid, two things happen: The kinds of metrics used to model the benefits change, and the pyramid narrows. The higher up the pyramid, the more the metrics focus on strategic issues, such as increased market share, reduced cycle times and increased revenue.

The narrowing of the pyramid symbolizes confinement; the more strategic the IT, the less room for measurement error. The higher you climb, the more rigor and accuracy are required. This doesn't mean that measurement of the support kinds of IT can be cursory or slipshod. Nor should we confuse strategic for complex. A storage-area network is as complex a proposition as an integrated marketing automation application. However, strategic IT introduces novelty — new ways of organizing business processes and defining job roles.

Many will object to this framework of aligning measurement rigor against class of technology. Enterprise resource planning (ERP), for instance, can be

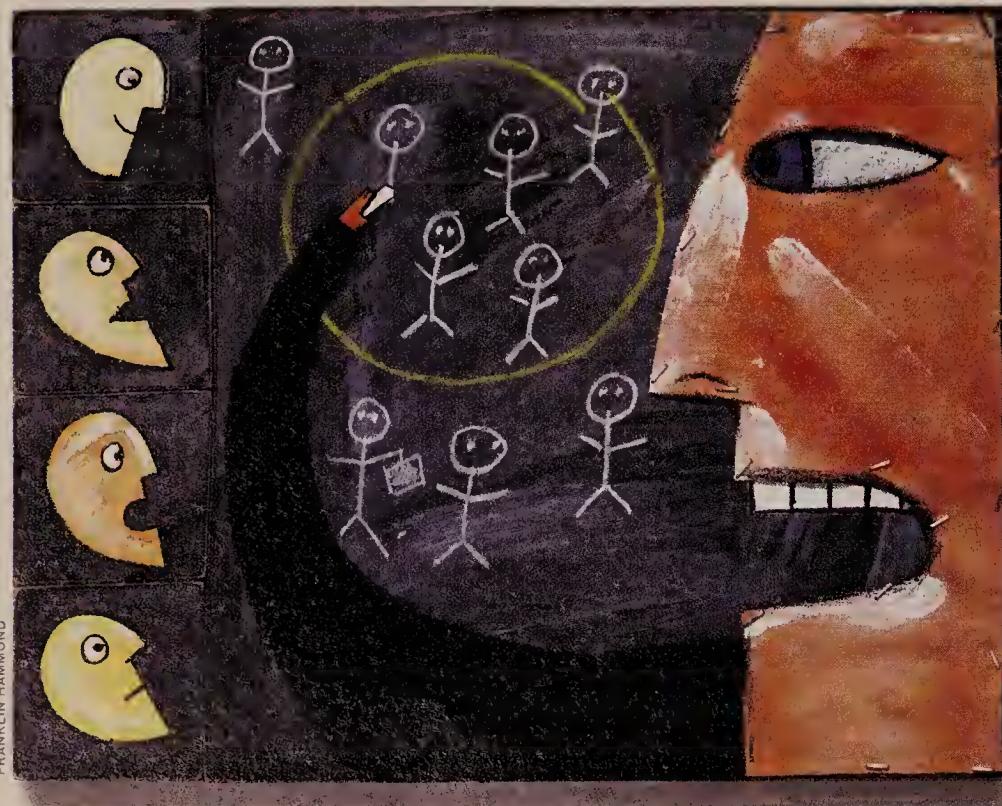
viewed as an infrastructure or support type of software because the entire company depends on it, so ERP is both strategic and essential. And a company might invest in point-to-point T1 connectivity between dispersed facilities as a strategic weapon, since it might allow the company to more effectively collaborate in delivering a product or service, enhancing its competitive position.

These exceptions reinforce this general rule: Some IT is essential but not strategic, and never will be. Companies that accept the contours of this proposition will spend less time measuring what's immeasurable and more time measuring what's novel and, perhaps, able to generate revenue. ▶



JOHN BERRY is an IT management consultant and analyst in Bend, Ore. He's currently writing a book about the measurement of intangible assets. Contact him at [vision@according2jb.com](mailto:vision@according2jb.com).

# Taking Projects to the Extreme



**Want to really get your business clients engaged in their projects? Try this.**

**By Kathleen Melymuka**

**W**HEN IT PROJECT manager Steve Hawrysh was brought in to a Midwestern fulfillment services company to fix a half-million-dollar project that was going nowhere, the first thing he noticed was that there was no real agreement on what the project was about. The goal seemed to be to port existing mainframe capabilities to a client/server environment, but no one seemed to know why. "Nobody had really challenged the business to say, 'Why are you doing this?'" recalls Hawrysh, an independent consultant in Plymouth, Minn.

Using extreme project management tools, he forced the business unit people to figure out what they really wanted and to realize that they didn't have

the time or resources to do it. The project was canceled.

"That was a success," he says, "because I saved them \$450,000."

"Most projects that fail, fail before they start," says Rob Thomsett, a senior consultant at Cutter Consortium in Arlington, Mass. Thomsett is a leading proponent of extreme project management and author of *Radical Project Management* (Prentice Hall PTR, 2002). Studies such as "The Chaos Chronicles" by The Standish Group International Inc. in West Yarmouth, Mass., show that IT projects fail because of lack of stakeholder involvement, incomplete requirements, lack of sponsor support or unrealistic expectations — in a phrase: lack of commitment from your business customers.

Extreme project management is a new approach that's relatively unknown in the U.S. It requires the project manager to leave the technology to the tech team and concentrate his energies on managing critical stakeholders. It grew out of the extreme programming movement of the mid-'90s, a radical version of rapid application development that emphasizes IT/business teamwork to provide enhanced customer satisfaction. (For more on extreme programming, go to [www.extremeprogramming.org](http://www.extremeprogramming.org).)

"It's called 'extreme' because it goes against common practice and is suited to projects being done in chaotic environments under severe constraints," says Thomsett, who does most of his work in Australia for companies such as A.M.P. Ltd. and Westpac Banking Corp., both in Sydney. "It's like extreme sports in that you have to be really proficient to do it."

Thomsett has developed a set of tools that are paper-based exercises designed to get stakeholders engaged. Project managers who have used the tools swear by them. "This process makes sure you're adding value to the company," Hawrysh says. "It makes you think about why we're doing it."

"In a traditional project, if it's not going to be done on time, someone has to break the news to executives," says Christine Moore, vice president of delivery services at Caribou Lake Software LLC, a Minneapolis firm that does custom software development. "Here, there's no news to break. If you're extreme, everyone is in it daily."

The following are four extreme tools that you can try. Project managers say that these tools, if used diligently and within the context of a so-called Rapid Project Planning session [QuickLink: 31177], virtually guarantee that your

business clients will take charge of the project.

## TOOL 1 Sliders: What Success Looks Like

Traditionally, projects are deemed successful if they're on time and on budget, but any business person stuck with a new system that doesn't add value can tell you there's more to success than that. "The Holy Grail is not modeling requirements, it's modeling expectations," says Thomsett.

This exercise requires critical stakeholders to draw a detailed picture of what project success will look like, using "sliders" that can be turned all the way on (Level 5) all the way off (Level 1) or anywhere in between, depending on how important each of seven criteria is to the project's success (see illustration, next page) "This determines everything," says Thomsett.

Project managers say sliders help them understand whom they're dealing with. Stakeholders in a financial system, for example, may turn up the budget slider but not care as much about deadlines. Stakeholders in a Web-based customer-facing project may place more emphasis on quality.

Sliders graphically demonstrate that when resources are limited, something has to give. "The tool forces [stakeholders] to face their own expectations," says Brian Walden, a program manager at AMP (U.K.) Financial Services Ltd. in Peterborough, Australia, who has used extreme project management extensively.

James Peterson (not his real name), is an IT project manager at a large U.K. bank who asked to remain anonymous because his company is publicity-shy. The first time he used sliders, nearly everybody turned all of them all the way on for a project with limited funds and a tight deadline. Then one business analyst got it: "Look," he said. "You can't buy a Rolls Royce for \$10,000; you buy a really good used Toyota that will get you from A to B."

Suddenly, everybody understood the tool, Peterson says. "Budget and time became fully switched on, value to the organization received a 4, quality received a 2, satisfied customers 3, and the group accepted that they won't get too much personal satisfaction out of the project because most of them wanted the Rolls Royce," he says.

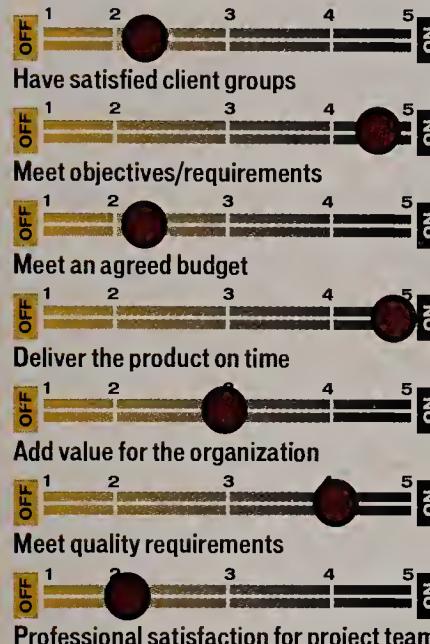
Sliders also do away with many surprises. "There will be no death march without knowing in advance because they say upfront how important team satisfaction is," Thomsett explains.

Most important, sliders facilitate

# MANAGEMENT

## A Sampling of the Tools

**SLIDERS:** In this project, budget and satisfaction are expendable. Meeting the deadline is a must. Meeting objectives with quality work is extremely important.



**IS/IS NOT SCOPE PLANNING:** The critical stakeholders of a project to add pages to a Web site might make the following decisions about what is and is not within the scope of the project:

IS	IS NOT
Creating new pages using the design and implementation standards of the current pages on the site	Working with marketing on redesign of current user interface
Ensuring that pages will equal or exceed functionality of existing pages	Solving performance issues in current pages
Making new pages available to all who access current site	Facilitating additional access to the site
Soliciting feedback from e-commerce, call center, marketing and product development	Soliciting feedback from other departments

**THE QUALITY AGREEMENT:** Each critical stakeholder votes on which of 10 attributes are essential to the project. The sponsor uses their input to make the final decisions.

ATTRIBUTES	HR	LEGAL	MARKETING	IT	SALES
Conformity	Yes	Yes	Yes	No	Yes
Usability	No	No	No	Yes	Yes
Efficiency	No	No	Yes	No	Yes
Maintainability	No	No	No	Yes	Yes
Reusability	Yes	Yes	No	Yes	No
Flexibility	Yes	Yes	No	Yes	Yes
Reliability	Yes	No	Yes	Yes	Yes
Portability	Yes	Yes	Yes	Yes	Yes
Audibility/Security	Yes	Yes	No	Yes	No
Job impact	Yes	Yes	No	Yes	Yes

communication and expose hidden agendas because stakeholders have to agree on slider placement. "If you can't get an agreement from critical stakeholders, walk away," Thomsett says.

### TOOL 2 Is/Is Not: Scope Planning

"A circle is defined by what is outside as well as what is inside," Thomsett says. The same goes for your project. The key to scoping is to get your stakeholders to define not only what is within the scope of the project, but also what isn't (see illustration).

Stakeholders are asked to name things that are inside and outside the project scope. For example, if your team will be creating new pages for a Web site, then "creating new pages" would go under "is." But if the team won't be enhancing current pages, that goes under "is not."

Continue this as long as you can, Thomsett advises. "The further down you go, the clearer it becomes," he says.

"It gets people thinking," says Hawrysh. "It really helps identify what this thing is you're working on."

"People think they know what the project is, but you find that no one is really on the same page," says Moore.

As project manager, whether an objective is inside or outside the scope is not your concern. The executive sponsor "owns" the project; you merely facilitate. "Let them fight over it," Thomsett says. If there's anything that stakeholders can't agree on, it goes to the

executive sponsor for resolution.

In the end, everything outside the scope either is assigned to a stakeholder, becomes a different project or simply won't be done.

"Projects are defined more clearly. It brings out the queries much earlier," Walden says. In fact, he says, projects are often canceled when the "is/is not" session makes stakeholders realize that they're not prepared to pay for the full scope.

### TOOL 3 Stakeholder Agreement

Everything that is not within the project scope, but is essential for the project (such as outsourced program-

ming), is assigned to a stakeholder, who completes and signs a stakeholder agreement.

In traditional project management, stakeholders are expected to take on responsibilities, but there's no accountability, Thomsett says. For example, if a subtask is to be outsourced and the stakeholder doesn't get around to it, the project team may end up doing the task by default, expanding scope and increasing risk without any recognition that it's doing so. To avoid this, it's essential to formally analyze, negotiate and agree in writing with each critical stakeholder on the services that are expected, the dates or timing of services, cost to the stakeholder of

providing the service, and an alternate source for obtaining the service.

### TOOL 4 The Quality Agreement

What level of quality is required? The quality agreement lists 10 attributes for the project. The stakeholders must agree on which are essential. The project manager doesn't care which attributes the stakeholders choose. He merely informs them that for every attribute required, both the risk and cost go up.

The quality agreement sets the baseline for all project quality assurance going forward.

### Not for Wimps

Extreme project management isn't for everyone. It takes project managers with the courage and executive backing to make the stakeholders toe the line, and it takes business people willing — or compelled by senior executives — to commit real elbow grease to a project. But the payback is worth it, say project managers.

"The tools help the customer feel involved and part of the team," says Moore. "The project is not something that happened to them; it's something they're a part of, and when that happens, everything is easier."

## Doing Lattes

"PROJECTS FAIL IN THE CONTEXT, not the content," says Rob Thomsett, a senior consultant at Cutter Consortium and a leading proponent of extreme project management.

Thomsett likens a project to two concentric circles. The inner circle represents the project content — the technical deliverables. The outer circle represents context — the managerial and sociopolitical environment. Traditional project management is focused inward, he says, but extreme project management focuses outward.

The bigger the project, the more time the project manager needs to spend on context. In big projects, project managers should be

spending 70% to 80% of their time "doing lattes" with stakeholders, he says. That means schmoozing, politicking, keeping them in the loop, keeping up their interest and commitment, getting their input. Remember, says Thomsett, it's *their* project. As project manager, you are merely the "passive conduit of their hopes and dreams."

"These things are easy to say, but in practice very hard to do," says Christine Moore, vice president of delivery services at Caribou Lake Software. "Project managers used to assign tasks; now you have to work on relationships with people and keep them involved and committed. The customer may say, 'I can't be there that day.' People may lose commitment. Your role really is running around 'doing lattes.' "

- Kathleen Melymuka

### THE RAPP SESSION

The Rapid Project Planning (RAPP) session sets the project's tone and gets decisions made.

QuickLink: 31177  
www.computerworld.com

**U**NTIL 1997, Puget Sound Energy Inc.'s definition of good customer service was mailing accurate monthly bills to its 2.1 million gas and electric customers. But with the possibility of deregulation or reregulation on the horizon, it knew it had to do better.

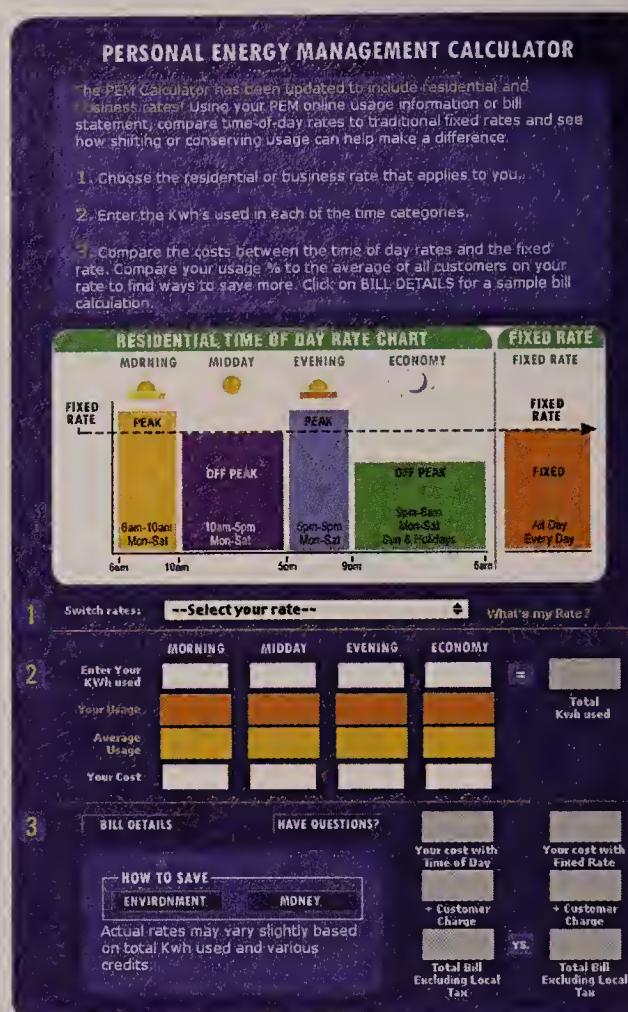
So the Bellevue, Wash.-based utility company decided to deploy a new automated meter-reading (AMR) system from New York-based Schlumberger-Sema — at a cost of \$45 million — and connect it to its customer information system, Customer Linx from Dallas-based Alliance Data Systems Corp.

Puget Sound Energy's (PSE) goal was to capture and share more real-time data with customers in Washington, where its coverage area spans nine counties.

By spring 2000, PSE's customer service needs shifted significantly. As wholesale gas and electric energy prices spiked, the company took the customer information from its AMR and billing systems and made it available to customers through an Internet portal.

The 450,000 residential gas and electric customers who signed up for the company's portal-based Personal Energy Management (PEM) program in November 2000 were able to see their energy usage for any given day, month or year, and compare the rates for peak and off-peak hours. They could also use a PEM calculator to see how they could reduce their bills if they were to switch from a flat rate to a time-of-day rate. (The program was only informational since time-of-day wasn't available then.) It also hoped to realize a return on its investment in 10 years — half the time it usually takes a utility to see ROI on an IT investment.

But the utility got more than it had hoped for. Regulators gave PSE permission to launch a pilot time-of-day billing program for 300,000 residential customers, who would be billed rates based on the times they consume energy rather than the traditional flat rates. Customer response to the program was overwhelmingly positive. Of those customers who signed up, 89%, or 267,000, had shifted some of their energy usage from peak to off-peak hours, re-



**PUGET SOUND ENERGY'S** Personal Energy Management calculator allows customers to see the time-of-day rates for their energy usage.

sulting in an overall 5% to 6% switch to the more economical off-peak rates for PSE as a whole.

But the big surprise was that 49% of those 267,000 customers consumed less energy, resulting in a 1% reduction in overall usage, according to surveys by the utility company last fall. "The conservation was a surprise for us," says Todd Starnes, PSE's manager of business development.

Different billing rates based on times of consumption have been available to large industrial customers for years. But what's new is using the Web to offer

that information to residential customers as well, says Dan Miklavic, a Seattle-based energy analyst at Gartner Inc. "It's fairly innovative in the sense that they [PSE] are changing people's consumption habits. From a utility perspective, that's not common," he says.

In October, PSE extended its pilot to 20,000 commercial customers. In June, it got permission to expand the residential pilot to 800,000 customers. Eventually, the utility wants to offer consumers a variety of rate packages similar to those offered by cable companies, says Brian Pollom, director of metering network services at PSE.

The program was innovative enough to earn PSE the 2001 Edison Award from the Washington-based Edison Electric Institute, which recognizes energy companies for outstanding contributions to the energy industry.

## Hefty Price Tag

Although time-of-day billing is common in several European nations and throughout Australia, it's still a rarity in the U.S.

One reason is that it's quite expensive. PSE spent \$45 million on the AMR system alone, which was fully deployed last month, according to Pollom.

Regardless of the costs, Miklavic says utilities will likely follow PSE's lead, because the not-in-my-backyard attitude will always limit the number of power plants that energy companies can build. "It's environmentally friendly, it encourages overall conservation, and it allows for the utility to meet demand in a more efficient fashion," he says. "So it's good business in the intangible sense. Financially, I'm not so sure."

But PSE has also seen financial and other benefits, says Pollom. The Internet self-service features and the AMR system have both helped the company reduce its workforce, he says.

The new system has shortened the billing and customer response cycles by days, adds Penny Gullekson, vice president of customer service at PSE. It has also given customer service representatives more analytical data, so they can provide more helpful information to customers, says Starnes. If a family's energy bill spikes, PSE can pinpoint when usage went up — and perhaps determine, for instance, that it happened when the kids were home from college.

The standard return on IT investments for many utilities is 20 years, says Pollom. PSE's goal was less than 10 years, and it's now estimating a nine-year target for direct returns that can be clearly measured in lowered costs or increased revenue. Factoring in the indirect returns, such as improved customer service and the time-of-day program that the new systems led to, PSE projects an ROI in less than five years.

"It's a large investment, and because of its size, you have to have a strong vision of the customer service and data you want," says Pollom. "It scares away most, and that's why you don't see a lot of this technology deployed at this level." Yet. ▶

## PROGRAMMED SAVINGS

Read how PSE is trying to develop thermostats that would allow consumers to reduce energy consumption.

**QuickLink:** 31302  
[www.computerworld.com](http://www.computerworld.com)

# Powering Down

Utility's Web portal lets customers switch to off-peak usage and cut costs. By Melissa Solomon



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**E**VEN BESIDE THE picture window with a spectacular view of New York Harbor, it's hard not to notice the red-letter mantra hanging in Marvin Balliet's office: "Expense Reduction + Cost Avoidance = Cost Savings."

Simple. But when asked how to measure the return on IT investments, Balliet, chief financial officer at Merrill Lynch & Co.'s global technology and services division, can go on for hours and still leave questions unanswered. "Everyone talks about ROI," he says. "But there is no simple answer to an ROI question."

The reason, Balliet explains, is that a return on investment formula is simply a tool to help companies make wise business decisions. Effectively measuring ROI is a matter of devising the proper governance system and procedures so business leaders ask the right questions and continually revisit them to keep their projects on target.

But even in the current cost-conscious business climate, many IT leaders have at best only a vague idea of what questions to ask. More than 80% of Global 2,000 companies don't have the right measurement systems to make sure that their IT initiatives are effective, according to Karen Rubenstrunk, an analyst at Meta Group Inc. in Stamford, Conn. For those companies that do, coming up with the right questions is a constant work in progress.



**“**Everyone talks about ROI. But there is no simple answer to an ROI question.

**MARVIN BALLIET, CHIEF FINANCIAL OFFICER, GLOBAL TECHNOLOGY AND SERVICES DIVISION, MERRILL LYNCH**

For instance, when Balliet joined Merrill Lynch's global technology and services division in 1999, he shifted responsibility for technology spending from the IT department to the business-unit leaders. He then had those leaders answer five broad questions aimed at capturing the scope and intent of their technology projects.

But Balliet soon learned that a question such as, What are the project's anticipated maintenance costs? can leave a great deal of wiggle room. For example, maintenance costs might be interpreted by different people as both software and hardware maintenance, or just one of the two. So he eventually learned to break that question into two: hardware maintenance costs and software maintenance costs. Balliet has also added such nuances to his "finance toolbox" and expanded the questionnaire to better capture such details. Now managers must complete

a six-section business case with about 80 questions (for more on this process, use QuickLink 27942).

Leaving the answers to those questions up to business users as opposed to IT leaders is the right approach, says H. Jameson Holcombe, CIO at Cambrian Communications LLC, a telecommunications and network services company in Fairfax, Va. That might even result in business users choosing an external vendor for a project instead of using in-house IT staff, he says. It's often more cost-effective to stay in-house, but for a sales force automation project, for instance, the finance leader needs to make that call, says Holcombe.

The problem is that many IT leaders insist on taking the lead on projects, even though they're not the ones who will be using the system and helping it realize its full potential, says Rubenstrunk. "So IT gets a black eye because there's little accountability driving value realization within the business," she

**Realistic ROI calculations require asking the right questions again and again. By Melissa Solomon**

# Inquiring minds

# MANAGEMENT

says. IT can guide users through the process and help them devise ROI figures. But, Rubenstrunk says, "when it gets right down to it, a technology person has no right to be held accountable for the value of business projects."

## Creative Calculations

Once process and governance systems are in place, it's time to start nailing down actual numbers. But those numbers are often moving targets.

For example, how do you determine funding costs when you don't know what interest rates will be in 18 months? asks Balliet. Or, if a system was intended to be a market leader but has since been adopted by competitors, will your company's returns be diminished? If a project's ROI was \$50 million in increased income, and income rises \$70 million after the first year, does that mean that the project was a success, or was there a shift from a bear to a bull market that drove up returns? How about if the goal of a project was to cut 20 staffers, but only 15 were let go? Does that mean it was a failure, or did sales volumes rose higher than expected, increasing the need for more man-hours?

Such questions illustrate why it's critical to measure a company's competitive position rather than simply looking at past performance, says Balliet. Companies also need to measure projects as a portfolio of investments that are regularly re-evaluated, he says (for more on project portfolio management, use QuickLink 27643).

If they don't measure up, pull the plug fast. Canceling a precarious project 60 days earlier, rather than waiting around hoping things will improve, can save a lot of money, Balliet says. There are always new questions to ask in determining ROI, he says. But it can be worth the effort.

"I don't want to tell you how far over budget we were in '99," Balliet says, adding that a quick glance over previous years' technology budgets revealed similar numbers. In 2000, by contrast, his division was \$77 million under budget, thanks largely to the greater attention paid to metrics.

Many executives are under so much pressure to keep costs down that they won't even ask for IT dollars these days, says Dick Hudson, a former CIO who's now principal of Hudson & Associates, an executive IT consulting firm in Katy, Texas. But with the third anniversary of the completion of the Y2k effort approaching, CIOs will need to start asking for technology upgrades, so they'll have to learn how to sell projects to company leaders, he says.

**CAMBRIAN COMMUNICATIONS CIO H. JAMESON HOLCOMBE** starts his ROI calculations by reviewing the following basic capital costs:

- Software/licensing
- Yearly maintenance
- Professional services
- Hardware
- Extra infrastructure needed

The challenge, though, is that some of those costs are subject to interpretation, Holcombe says. For instance, for an order-workflow system, one manager might measure order processing time from the time the order is placed until it's delivered. But another manager might simply gauge the time it takes to act on an order. So it's important to be specific about where the numbers come from.

Once Holcombe determines the capital

costs, he compares them with what he currently spends and the anticipated productivity gains from the proposed capital investment.

But how do you determine those gains? Meta Group analyst Karen Rubenstrunk says there are two types of metrics to measure gains from IT. The first looks at how effectively an IT department is run. The second gauges how valuable IT investments are to your business. To measure your IT organization's effectiveness, she suggests the following:

- Review customer surveys. Has customer satisfaction increased?
- Consider the time spent on IT projects. Is the IT organization improving its delivery time?
- Test employees. Are they absorbing training and learning new technologies?
- Quiz employees on the big picture. For in-

stance, do they know the top three governance principles that drive the company's architecture?

- Are projects on time and on budget?

To measure how valuable your IT investments are to the business, help business-unit leaders develop very clear, tightly defined deliverables in no more than three-month chunks, advises Rubenstrunk. Some possible deliverables include the following:

- Process efficiencies: Can this help eliminate positions?
- Process redesign: Will the project help automate processes so new projects don't need to be started from scratch?
- Customer satisfaction: Will your customers spend more?

- Melissa Solomon

In addition to honing project-proposal skills, Hudson suggests that leaders also learn to repitch projects if initially rejected. If a manager explains what he has tried to do and documents the problems he has faced because a project wasn't funded, senior leaders will often recognize that the manager put in a good-faith effort and will reconsider the proposal, says Hudson.

"A lot of CIOs never follow up on the projects they proposed to show they are valid," he says.

## Street Smarts

Unfortunately, says Holcombe, there's no one-size-fits-all formula for using metrics to ensure ROI. The only way to come up with a good quantitative analysis is to learn through experience, he says. That's where a solid project-management library documenting costs, hours and other factors from past projects comes in handy.

For instance, if a project requires an estimated 300 hours of work, comparing 300 hours in consulting costs with the cost of using in-house staffers for the same amount of time might not provide the best numbers. For example, in-house developers may be paid on a 40-hour workweek but actually average 60 hours per week, so the cost per hour for those workers may be less than it seems, he says.

It's also wise to ask vendors about their lessons learned regarding costs. When vendors offer ROI figures, ask them for real-world examples, grill them about problems faced in those projects and insist that they think about how they'll avoid those prob-

lems this time, suggests Holcombe.

Soft costs and cost benefits are also critical. For instance, about a year ago, Pacific Gas & Electric Co. started using help desk technicians to create new Web-based IT support features, including online incident reports and a technology tips newsletter. Those technicians spent less time waiting for calls and more time building tools to boost department efficiency, says Ruby Gin, supervisor of the San Francisco-based utility company's technology service center. So not only were the technicians helping to improve the department; they were also given the chance to develop their skills and diversify their activities, which can boost retention, she adds.

"It's good to have measurement tools in place, but what's most important is the people," says Gin. "You want to be able to do that and keep morale up so people want to give it 100%."

And, of course, there are the common-sense measurements. A project might look great on paper, but if it ignores a critical reality, such as a key technology failing to perform as promised, it could be a disaster, cautions Holcombe.

"'Dilbert' is a great example of how people lose sight of common sense and what's important," he says. "Try not to provide anecdotal stories for 'Dilbert.' That's our mantra." ▶

## MORE THAN 20 QUESTIONS

For a sampling of the 80 categories Merrill Lynch CFO Marvin Balliet uses to gauge ROI, visit our Web site:

 QuickLink: 31240  
[www.computerworld.com](http://www.computerworld.com)

# MANAGEMENT

**O**UTSIDE OF A FEW MBA PROGRAMS, there are no schools that formally teach IT professionals how to become chief technology officers. But aspiring technology managers and CTOs who want to learn from their peers can receive an informal education through a number of regional CTO clubs. While there are only a handful of these groups, they appear to be broad enough in scope to help both junior IT managers and seasoned CTOs. More recently, members say, they've been especially helpful to managers by providing guidance on how to steer budgets, projects and staffs through tough economic times.

"For the last year, CTOs have needed more mentoring, whether to help downsize their staffs, manage the same workload on a smaller budget or make use of legacy systems at a time when they can't make expenditures for new ones," says Curtis Brown, CTO at Oxygen Media Inc., a New York-based operator of a cable TV channel for women.

Jon Williams, CTO at Grey Healthcare Group Inc., a New York-based advertising and communications firm for the health care industry, has pushed for the creation of professional CTO groups as a way to help mentor prospective technology leaders. He is also a co-founder of the New York CTO Club.

The New York CTO Club is limited to about 30 members, who meet for breakfast once a month. Membership and attendance at meetings are by invitation only, and the group doesn't have a public Web page. Through the group, Williams tries to identify people who are potential CTOs and help them learn management techniques that will serve them well.

"Almost everyone in the group is a good technologist, so they usually don't need help in that area. We try to help them with management and communications skills," says Williams, who was previously an IT consultant.

## Path to CTO

Good technologists often follow the same career path, says Williams. They graduate, become proficient in IT and then discover that they haven't learned management basics such as how to run a company or manage people. Williams says that the people he aims to help are the ones who have come to the realization that being an expert technologist is not everything you need to be a CTO.

In the Midwest, the Chicago CTO Roundtable meets monthly for what co-founder John Adams calls an opportunity "to bounce ideas off each other, whether it's about the prices of hardware and software or staffing issues." Adams, vice president of technology at CoolSavings Inc., a Chicago-based company that handles corporate sales promotions, says the mission of the roundtable is to provide a forum for discussing common CTO issues and to help some of its 15 members or their guests "who jumped or were pushed into being CTOs a little too early."

Members of the Chicago CTO Roundtable are the highest-ranking IT executives from their organizations, regardless of their individual job titles. In addition, people with lower-ranking IT titles are welcome as guests of members. Having a mix of people helps promote informative and practical conversations, Adams says. For example, at recent meetings,

## Benefits of Membership

- Receive mentoring on key nontechnical skills, such as communicating with top management and calculating return on investment estimates for IT projects.
- Participate in candid peer discussions on common CTO issues, such as hiring consultants, choosing software and running an IT group on a tight budget.
- Get firsthand career advice from experienced technology leaders.

members and visitors have shared experiences about selecting consultants and choosing the right methodology for implementing new technologies.

Mike Toma, CTO at eLabor Inc., a workforce management software company in Camarillo, Calif., says self-interest propelled him to start the Los Angeles CTO Forum with five other members. He needed a group to discuss managing larger groups of employees. "I tried for years to find CTO groups, but there weren't any except for large annual events. I wanted a smaller peer group where CTOs could get together," Toma says. The group is now known as the Technology Leadership Council and has 54 members in chapters in Los Angeles, San Francisco and Boston.

Toma sees a big need for peer mentoring because most CTOs come from technical backgrounds and haven't had a chance to develop their people or management skills. "We discuss things such as the various roles of CTOs, the metrics and ROI statistics that are used each day to make decisions and how to deal with the executive management team," he says.

One of the best things CTO mentors can do is help others choose whether to focus on technology or on management, says consultant Andreas Turanski, a member of the New York CTO Club. "Most people can't be equal in both technology and management. So the best answer is to decide what you should try to pursue," Turanski says.

Another big issue for many CTOs is the need to learn on the job. "The right people may be in the CTO jobs, but it happened to them too fast. Peer group mentoring can help that situation," says Eric M. Mark, a New York CTO Club member and CIO at AEGIS Insurance Services Inc. in Jersey City, N.J.

Mentoring is also good for the person doing the teaching, says Oxygen's Brown, who is a member of the New York CTO Club.

"Mentoring is as satisfying as anything else in my job," he says. "If I can do something to make someone else do their job better, I'm one satisfied CTO." ▶

## CAREERS

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## CTO CLUB CONTACTS

- **New York CTO Club:** John Williams, [jonwilliams@yahoo.com](mailto:jonwilliams@yahoo.com)
- **Technology Leadership Council:** Mike Toma, [MToma@elabor.com](mailto:MToma@elabor.com)
- **Chicago CTO Roundtable:** John Adams, [johnadams@coolsavings.com](mailto:johnadams@coolsavings.com)

# Join The Club And Get Ahead

Regional groups offer CTOs and wannabes a place to network and learn.  
By Steve Alexander

# Dear Career Adviser:

*I have a finance and computer science background and several years' experience working as a business analyst. I'm interested in working on an e-commerce initiative. What roles make sense for me? — E-INITIATIVE*

#### Dear e-Initiative:

The investment and finance communities have been hit hard this year economically. Companies in this market segment are interested in providing services that help retain customers, using the Internet as a channel to reach customers and providing intranets for customer service.

"Many jobs require contact with the business users for design and analysis, plus the ability to talk to the technical folks who are actually doing the hard coding," says Loretta Smith, a senior consultant for information architecture at T. Rowe Price Group Inc. in Baltimore. "Plus there are database and systems development jobs." Therefore, where you go from here depends in part on the role you want to play.

If you want to remain an analyst, the key to being useful in this medium is having experience working with end users to decide the requirements and thinking about the designs that might solve a particular problem. You will also need to show that you understand the company's business and demonstrate competency on issues regarding security, network traffic and databases.

"At some point, someone has to send a SQL call for data, and that is where the rubber meets the road," Smith says.

Finally, you might have to apply for contracting, temp-to-perm or even operations jobs to get your foot in the

door. In this environment, companies often want to look at you before they commit to a full-time relationship.

#### Dear Career Adviser:

*I have worked in IT and finance in the New York area and am wondering whether there has been any improvement in the market. If so, where? Also, are there any particular strategies to generate more interest in my background? — EAST COAST ELLEN*

#### Dear East Coast:

Even companies with hiring freezes are still doing some hiring on the permanent side and a bit more on the consulting side because jobs still need to get done, says Jay Colan, a New York-based senior consultant and vice president at Lee Hecht Harrison, a global outplacement firm. But you undoubtedly will need to do a lot to get yourself noticed and stay fresh in a tight market.

If you haven't already, start networking. Contact people listed on company Web sites and on your college alumni site. Also, attend events such as those sponsored by the New York Software Industry Association ([www.nysia.org](http://www.nysia.org)) or the New York New Media Association ([www.nynma.org](http://www.nynma.org)).

Then, work on your résumé. Résumés of senior people attract attention if they highlight skills in enterprise systems, security and risk management. Junior people will stand out from the crowd if they have skills in desktop support, security and LAN administration, says Colan. In addition, résumés seem to get more hits if they feature qualifications such as the Microsoft Certified Systems Engineer and the Project Management Institute's Project Management Professional certifica-

tions. Keep your skills updated by learning about upcoming releases and going to vendor Web sites, where you can often find new client presentations and white papers. Since the early fall is when managers prepare and submit budgets, follow Colan's advice: Don't slack off even though it's summer.

#### Dear Career Adviser:

*I started in mainframe applications programming, working most recently as an applications developer in a cross-platform development environment. I had a Y2k project but now need to think about revitalizing my technical career, perhaps by moving over to systems integration and middle-tier development. What is the most logical route?*

— MAINFRAME TO THE MIDDLE

#### Dear Middle:

The market made two or three advances while you were involved in your rewarding Y2k effort, and now you need to play catch-up with Java development and network computing architectures, says Paul Ryan, chief technical officer at Overture Services Inc., a Pasadena, Calif.-based company that provides pay-for-performance search capabilities to Web sites.

Essentially, you have a few choices. If you want to work on the latest enterprise systems integration projects, you must understand today's platforms and "who is integrating what with what,"

says Ryan. This demands, among other competencies, experience with application servers such as IBM's WebSphere, BEA Systems Inc.'s WebLogic and Sun Microsystems Inc.'s iPlanet, as well as experience with Java 2 Enterprise Edition, Enterprise JavaBeans and enterprise messaging and Art Technology Group Inc.'s Dynamo personalization and commerce functionality product.

Even if you have training and certifications under your belt, you'll be at a disadvantage at interviews if you don't have hands-on experience with these newer architectures. But you can still impress a hiring manager by downloading applications from a Web site and building an application server environment, which will give you something substantial to demonstrate. ▶



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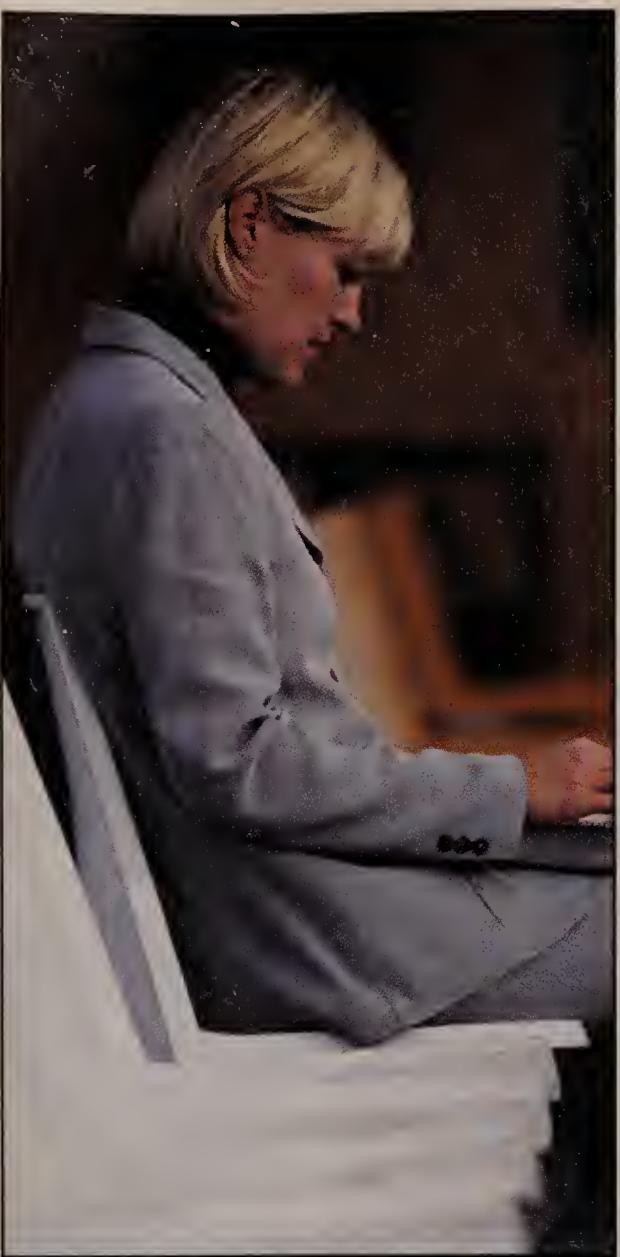
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Provide specialized knowledge to the Oracle Financial & Management Program. Responsible for overseeing technical support & services for the Oracle production systems. Will identify & correct problems plus design software. Develop training material & develop project plans for the financial & manufacturing modules of Oracle.

Job Requirements:

Must have a BA degree in a related field & a minimum of 5 years' experience as a technical Programmer working with Oracle tools. Applications experience must include Distribution/Supply chain, financial modules & AOL. Must have extensive knowledge of system methodologies for Oracle applications work. Experience in integration of Oracle applications with third party applications, knowledge of warehouse management system, data warehouse, business objects & EDI is required. Job Code: OPL2

Interested: Please send resume, job code & salary requirements to: HR Dept., Honeywell Consumer Products, 250 Turnpike Road, Southborough, MA Fax: (508) 460-8056. e-mail: resume.account@honeywell.com. An equal opportunity employer, we are committed to a diverse workforce.

**IT PROFESSIONALS NEEDED**  
Programmer Analysts...Systems Engineers...Software Development...Digital Equipment (India) Ltd. is a leading software company with offices nationwide. With Digital you will get: Additional Compensation for referrals, and Professional Challenges with training and assignments to keep you at the leading edge of technology. We need people with the following skills: OS: Open VMS, NT/Windows 2000, Tru 64Unix.

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First Data Corporation has openings in various divisions for Database Administrator, Software Quality Assurance Analyst, Release Manager, Senior Software Developer/Analyst, and Intermediate Software Developer. Database Administrator must have four years related experience as Oracle DBA and a bachelor's or foreign equivalent in computer science, math, or engineering. Software Quality Assurance Analyst must have two years related experience in software quality assurance and a bachelor's or foreign equivalent in computer science. Release Manager must have two years experience as a release engineer and a bachelor's or foreign equivalent in computer science. Senior Software Developer/Analyst must have two years of software development experience and a bachelor's or foreign equivalent in computer science or related field. Intermediate Software Developer must have three years experience implementing and integrating Oracle products. We have positions in the following areas: Montvale, NJ; San Francisco, CA; Rocklin, CA; and Houston, TX. Please send your resume by mail to: Norm Barnett, First Data Corporation, 6200 S. Quebec St., Greenwood Village, CO 80111, and refer to job #3963RA.

IT firm in Detroit, MI seeks to fill the following positions:

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**DESIGN ENGINEERS:**

1. Exper in design, implement, data migration, testing of PDM systems-Metaphase/Windchill/Enovia; skills such as C, C++, Java, Oracle RDBMS, SAP, CAD/CAM.
2. Exper in ICAD development & other KBE OO Systems, w/strong background in CAD/CAM/CAE.

**REQUIREMENTS:**

Must have BS or MS or equiv in CS, Mechanical or EE, Bus Adm, Finance or related field; & 1-5 yrs exp in the req'd area.

Positions available in Detroit, MI & at client sites throughout US. Pls mail resume to HR, 32255 Northwestern Highway, #248, Farmington Hills, MI 48334

System Administrators sought to generate, tune, configure, and upgrade Unix and Linux based operating systems.

Database Administrators sought to code, test, and implement physical database. Design logical and physical databases. Manage and maintain database.

Both positions require BS in Computer Science related major and related experience. Send resume HR, World Trade Network, Inc. 5433 Westheimer, #200, Houston, TX 77056.



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Several computer related positions available for international airline telecom and information services company. Degree, technical skills & experience vary per positions. Send resume to Natasha Lytle, SITA INC, 3100 Cumberland Blvd., Ste. 200, Atlanta, GA 30339 or [jobs@sitacareers.com](mailto:jobs@sitacareers.com).

Applications Developer. Develop and implement web and intranet based software apps using Oracle, SOL, Cold Fusion, Interdev, DreamWeaver, and Flash. Bachelor degree in C.S. req'd, as is 9 mos of exp in job off'd or a web-based programming position. Must have exp using SOL in a web-based environ. Competitive Salary. Resumes to Dennis Hunter, Pratt Corporation, Job #2489.02, 3001 E. 30th St., Indianapolis, IN 46218.

Software Engineers & Programmers. Analyze, design, develop, test and implement specialized business apps. in Business Objects Ver 5.1, Web Intelligence and related Business Objects products, VB Script, Oracle and related RDBMS and related tools. US Workers only. Prevailing wage & benefits. Travel to client sites req'd. Contact Evelyn Logan, Sapphire Consulting, 8 Orange St., Edison, NJ 08817. EOE.

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Software Programmer/Project Leader Lisle, IL Software programmer/project leader to work on records management system project, using Microsoft Delphi, Visual C++ and MS SQL 7.0/2000 based management system. Require to analyze system and business requirements and develop software programs to meet them using Object-Oriented methodology. Must have Bachelor degree in science field. 1 yr experience as Software Prog./Project Leader 40 h/wk, OT as needed 8-5 PM \$60,00 annual OT at OT rate. Applicants must show proof of legal authority to work in U.S. Send 2 cover letters and 2 resumes to: ILLINOIS DEPARTMENT OF EMPLOYMENT SECURITY, 401 South State Street - 7 North, Chicago, IL 60605 Attn: Brenda Kelly, Ref. 3 V-IL 31538-K AN EMPLOYER PAID AD. NO CALLS

Seeking qualified applicants for the following position in Memphis, TN: Senior Programmer Analyst: Formulate/define functional requirements and documentation based on accepted user criteria. Requirements: bachelor's degree or equivalent\* in computer science, MIS, computer systems engineering or related field plus 5 years of experience in systems /applications development. Experience with client/server technology or object-oriented analysis; C, C++, Smalltalk, Visual Basic or Java; and CORBA also required. \*Master's degree in appropriate field will offset 2 years of general experience. Submit resumes to Sibi George, FedEx Corporate Services, 1900 Summit Tower Blvd., Suite 1400, Orlando, FL 32810. EOE M/F/D/V.

Software Developer. Develop computer apps. s/ware and specialized util. programs using OOD, RDBs, Network Security, OA, and Internet apps. Masters degree in C.S., Eng'g or sim. field req'd, as in 2 yrs of exp. in a s/ware devel. position. Competitive Salary. Resumes to Kimberly Miller, Dir. Of H.R., Rose-Hulman Institute of Technology, Job #1865.04, 5500 Wabash Avenue, Terre Haute, IN 47803

Software Engineers needed. Senior level positions available for candidates possessing MS degree or equivalent and/or relevant work experience. 1 year of the experience must include working with Oracle and Developer 2000. Work with the following: Oracle, PL/SOL, Developer 2000 (forms 6i and Reports 6i) and Visual Basic. Mail resume, references and salary requirements to: Symbiosis International, 3965 Okemos Road #B2, Okemos, MI 48864.

TECHNICAL  
SBI is looking for the following positions for its offices in Houston, TX, San Francisco, CA, Warren, NJ, Salt Lake City, UT, and Portland, OR: Programmer Analysts, Technical Architects, Graphic Designers, Business Strategists, Systems Analysts, Software Eng. Resumes by email or fax only to B. Tognazzini, SBI and Company, 410 Townsend St., San Francisco, CA 94107 [btognazzini@sbiandcompany.com](mailto:btognazzini@sbiandcompany.com); fax (415) 369-6822

Digeo seeks S/W Engr. for Kirkland, WA office. DESC: Dsgn, dev, impl, & test multi-tiered distrib. apps. to access data on local & remote RDBMS util. SQL, Java, C/C++, OO dsgn methodologies, Win, & Linux /Unix o/s. Install, config, & deploy web & app. servers. REO: BS in CS, Math, Engr, or Physics plus 2 yrs exp. dsgn, dev, impl, & test RDBMS & rel. multi-tiered distrib. apps. util. SQL, Java, C/C++, OO dsgn methodologies, Win, & Linux/Unix o/s. Install, config, & deploy web & app. servers. Prem, sal + bns & benes. Pls. reply to HR, Job # DI-103, 8815-122nd AVE NE, Kirkland, WA 98033.

Pro Softnet Corporation has multiple openings at its Woodland Hills office, and unanticipated client sites throughout the U.S. for the following positions: Software Engineers, Programmer Analyst, Business Manager, Management Analyst. Mail resumes to: Pro Softnet Corp, 21300 Vicory Blvd. # 1230 Woodland Hills, CA 913007 Attn R. Kulkarni Code P101.

Mphasis-BFL Ltd. and its subsidiary Mphasis Corporation has multiple openings for the following positions at its offices in Santa Monica, New York and unanticipated client sites throughout the U.S. Programmer Analyst, Software Engineer, Project Manager, Management Analyst, Sales Engineer, Business Development Manager, Finance Manager. Please send resume and salary history to: [hr@mphasis.com](mailto:hr@mphasis.com) or mail to: HR 444 Park Avenue South, Suite #503, New York, NY 10016

Responsible for coding, designing and re-engineering Web applications for clients. Write applications using C++, Rational Rose, UML and object oriented analysis and design. Responsible for dealing with the business partners in gathering the requirements and creating specifications. Must have a Bachelor's degree in CS or foreign degree equivalent. Must have 1 yrs of exp. in job offered. Salary Competitive: Send resume to: Raj Shekaran Software Research Assoc. 70 Mansell Ct. Ste. 100 Roswell, GA 30076.

SYSTEMS ARCHITECT to serve as chief architect for major client server projects using a CASE Life Cycle Methodology. Serve as a CASE Administrator, providing overall troubleshooting solutions in an ORACLE development environment. Provide systems architectural solutions applications development in a Client Server Environment. Conduct design and development peer reviews for quality assurance. Mentor overall development standards with application teams and leads. Provide directional support for DBA. Production Control in the areas of performance evaluation and tuning. Also act as backup DBA. Requires B.S. degree in Computer Science and 5 years experience in the job offered or 5 years related experience as Systems Analyst, Software Consultant and/or Software Programmer. Work experience must include 5 years of experience in an ORACLE CASE environment. 40 hrs/8:00 a.m. to 5:00 p.m. \$83,200 per year. send resumes to MDCC/ESA, P.O. Box 11170, Detroit, MI 48202, Ref. No. 202155. Employer paid ad.

Software Engineer: 40hr/wk, 8am-5pm, \$60,209/yr. Min. Requ-M.S. in Computer Science or related. Develop the Net Event Report system using data generated from OPENVIEW system; object-oriented design using C/C++, UNIX, AIX600, AS/400, Java, and HTML; create Net Event Report Data Base in Oracle; generate different reports using CGI, network management using Oracle-web, HP-Unix, Perl and CGI; database transfer using Visual Basic. 3 yr above exp. or in related occupation: Programmer/Analyst. "Employer Paid Ad". Contact MDCC/ESA, P.O. Box 11170, Detroit, MI 48202, Ref. # No. 202404.

PROGRAMMER ANALYSTS wanted by software consulting co. in Houston, TX. Must have degree and exp. Respond by resume to: Mr. B. Hilton, R/T#10, Connective Technologies, Inc., 7676 Hillmont St., Ste 120, Houston, TX 77040.

PROGRAMMER ANALYST wanted by computer consulting firm from Sugar Land, TX. Must have Computer Science degree and exp. Respond by resume only to: Ms. B. Nelson, Recruiter, J/K, Digital Consulting & Software Services, One Sugar Creek Center Blvd., Ste. #500, Sugar Land, TX 77478.

Asst Vice Pres. (Los Gatos, CA): Manage all bus. for sale of Active Matrix Liquid Crystal Display technology in Japan & Asia. Oversee dev. of bus. plans, policies, & aims to improve mkt position & share. Apply bus./eng'g principles to rel'ship of Kopin & our clients. Travel to bus. territory. Qualify with BS, EE or rel. area, 5 yrs exp in job or 5 yrs in eng'g sales & mktg. Send 2 resumes to: NP, Kopin Corp., 695 Myles Standish Blvd. Taunton, MA 02780, an EOE.

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**DIRECTOR OF TECHNOLOGY-** Interior Construction Company seeks Director of Technology with the following responsibilities: Oversee a network of 100 workstations, 15 servers & a tech. staff of 2 programmer analysts & 5 network technicians; design & build construction information system & integrate w/existing legacy accounting system; integrate existing construction technology with AIA standard processes to streamline the work processes. Successful candidate will have a Bachelor's degree in Computer Science or Civil Engineering, & 1 y exp. in job duties or 1 yr. exp. as Civil Engineer. Experience in DB programming, Drywall technologies & processes & NT networks a must. Mail resume to Component Assembly Systems, 620 Fifth Ave., Pelham, NY 10803, Attn: John Rapaport.

**Sr. Software Engineer:** Charlotte, N.C. Full-Time. To review, analyze and modify programming systems as well as develop Java, EJB, JSP and XML, conduct unit and integration testing, document, produce SOL, integrate with hardware group and have proficiency in various Servers. B.S. in Engineering or academic equivalent in engineering or related occupation plus 5 years of progressive experience in Engineering is required. Fax resumes to R. Brinson (704) 510-0408.

Programmer Analyst needed by GA based IT firm. req'd skills: Websphere Commerce Suite, Websphere Application Server, OOAD, RUP, Java, C, C++, UML. Send Resumes to HR Dept, Objects On Net, Inc. 110 Commerce Dr, Suite 111, Fayetteville, GA- 30124

**Software Engineers,** Atlanta: Develop, support & enhance web based collaborative software tools in Unix & NT environ & integrate legacy sys. using Java, XML, DHTML, DCOM, EJB, JSP, Servlets, 00D-OOP. Req. BS in HCI, 1 yr development exp & knowledge of J2EE, EJB, Servlet and JSP. Fax resume: L. Anderson, MediaOcean, 404-885-9949

Noetix seeks Sr. S/W Engr. for HO office in Bellevue, WA. DESC: Lead team of developers & engrs. Arch, dsgn, dev, & test corp. IS, RDBMS, servers & rel. web apps. util. SOL, C++, OO dsgn & prog. COM/DCOM, ODBC, MFC, Win & Unix o/s. REO: BS in Engr, CS, Phys, or Math + 5 yrs. exp. dsgn, dev, & testing RDBMS & rel. apps. util. SOL, C++, OO dsgn & prog. Win & Unix o/s. Plus 1 yr. exp. dsgn & dev. web apps. util. COM/DCOM, ODBC & MFC. Pre. sal. + benes. Pls. reply to J. Hubbs, Job #NC-106, 2229-112th Ave NE, Ste. 200, Bellevue, WA 98004.

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Managing Systems Engineer: manage, direct and oversee the sale of software products based on his technical knowledge of software system and development. Hire, fire, and train sales engineers and other technical staff. Create sales strategies. Supervise and assist in the development of software products, as well as maintenance and technical support for such products. Req. Bachelor's Degree in Business, Economics, or MIS with 2 years exp. in job offered or IT Manager. Must have ability to install CICS, VTAM and IMS. Must be proficient in setting up TCP/IP. \$100K/yr, 40hr/wk, 9-5. Send resume to Beta Systems Software, Inc. at 10 Eastbrook Bend, Suite 101, Peachtree City, GA 30269

Software Engineer wanted by Norden Corp. in Piscataway, NJ. Must have a Master's degree in computer science or related fields with at least two years experience in developing trading systems. Job duties include designing and developing architecture for trading systems using object-oriented technology and various software development tools, and developing and implementing high performance applications using various data communication protocols, standards and equipment. Must have Fixed Income and equity derivatives knowledge, strong math background and quantitative skills. Please send resume to [www.norden.com](http://www.norden.com).

**SOFTWARE ENGINEER**

Software engineer to design, develop and test computer programs for business applications; analyze software requirements to determine feasibility of design; direct software system testing procedures using expertise in Tuxedo, JDeveloper, Oracle 8.0 and JBuilder. Requirements: Bachelor's Degree or equivalent in Computer Science or related field and two years experience as a software engineer or computer programmer, knowledge of Tuxedo, JDeveloper, Oracle 8.0 and JBuilder. Salary: \$70,000/year. Working Conditions: 8:00 A.M. to 5:00 P.M., 40 hours/week, involves extensive travel and frequent relocation. Apply: Manager, Butler County CareerLink, 112 Hollywood Drive, Suite 101, Butler, PA 16001, Job No. WEB259773.

**SOFTWARE ENGINEER**

Software engineer to design, develop and test computer programs for business applications; analyze software requirements to determine feasibility of design; direct software system testing procedures using expertise in EJB, Oracle 8i, JBuilder 4.0 and CORBA. Requirements: Bachelor's Degree or equivalent in Computer Science or related field and two years experience as a software engineer or computer programmer, knowledge of EJB, Oracle 8i, JBuilder 4.0 and CORBA. Salary: \$66,000/year. Working Conditions: 8:00 A.M. to 5:00 P.M., 40 hours/week, involves extensive travel and frequent relocation. Apply: Manager, Armstrong County Team PA CareerLink, 1270 North Water Street, PO Box 759, Kittanning, PA 16201, Job No. WEB259792.

Programmer Analysts-Experience with ERP/CRM, ORACLE apps, PowerBuilder, MS SOL Server, DBA, JAVA, ASP, Network Engineers Employer is a computer consulting company. Relocation required. Send resume to: Dan Wilson, APOGEE SOFTWARE SYSTEMS, PBM 254, PO Box 2800, Carefree, AZ 85377.

**Vice President of Research & Development**

Manage web-based collaboration software development team and work on software product design. Travel required.

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**SOFTWARE ENGINEER**

Software engineer to design, develop and test computer programs for business applications; analyze software requirements to determine feasibility of design; direct software system testing procedures using expertise in ASP 2.0, T-SQL, SOL Server 2000 and Erwin. Requirements: Bachelor's Degree or equivalent in Computer Science or related field and two years experience as a software engineer or computer programmer, knowledge of EJB, Oracle 8i, JBuilder 4.0 and CORBA. Requirements: Bachelor's Degree or equivalent in Computer Science or related field and two years experience as a software engineer or computer programmer, knowledge of EJB, Oracle 8i, JBuilder 4.0 and CORBA. Salary: \$66,000/year. Working Conditions: 8:00 A.M. to 5:00 P.M., 40 hours/week, involves extensive travel and frequent relocation. Apply: McKeesport/Allegheny City CareerLink, Attn: JS Supervisor, 345 Fifth Avenue, McKeesport, PA 15132, Job No. WEB259807.

**SOFTWARE ENGINEER**  
NE OH Consulting Co. seeks Systems Analyst to automate processing or improve existing computer applications; analyze user requirements; investigate alternatives, design, document, build, test, and implement solution in SAP; design sales, distribution and material management modules; provide production support; lead team; mentor staff. Min. 5 yrs. in-job exp. required. Exp. must include SAP ABAP; user-exits, IDOC; understanding of SAP's WM, LE, SD, Warehouse Management modules; use of Internet Explorer, MS Windows, MS Office Suite, Visio, Lotus Notes, Remedy. Travel required and must be willing to work different shifts. Resumes to CCAi Consulting, 5800 Landerbrook Dr., Mayfield Hts., OH 44124. No Calls. EOE

**SOFTWARE ENGINEER**

Software engineer to design, develop and test computer programs for business applications; analyze software requirements to determine feasibility of design; direct software system testing procedures using expertise in ASP.NET, SOL Server 2000, C# and ADO.NET. Requirements: Bachelor's Degree or equivalent in Computer Science or related field and two years experience as a software engineer or computer programmer, knowledge of ASP.NET, SOL Server 2000, C# and ADO.NET. Salary: \$75,000/year. Working Conditions: 8:00 A.M. to 5:00 P.M., 40 hours/week, involves extensive travel and frequent relocation. Apply: Manager, Beaver County Team PA CareerLink, 2103 Ninth Avenue, Beaver Falls, PA 15010, Job No. WEB259800.

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- DATABASE ANALYST
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- SOFTWARE ENGINEER
- WEB DEVELOPER / ARCHITECT
- DATA WAREHOUSING ARCHITECT
- IT PROJECT MANAGER
- BUSINESS ANALYST
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Our skill sets include:

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- E-COMMERCE
- MAINFRAME
- MID-RANGE, AS/400
- CRM - SIEBEL
- DATA MODELING

Contact the Corporate Headquarters for positions available in the following areas: Arizona, Colorado, Connecticut, Florida, Georgia, Illinois, Massachusetts, New Jersey, New York, North Carolina, Pennsylvania, Southern California, Texas, Virginia/DC.

For consideration please reference Job Code: RIRCW10 and send your resume to: RCG Information Technology, Attn: National Recruiting, 379 Thornall Street, Edison, NJ 08837; FAX: (732) 744-3583 or email to: recruit@rcgit.com We are an Equal Opportunity Employer. M/F/D/V.

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**Software Engineer:** For IT consulting co, resp for complete feature enhancement & design of new features according to clients' specs, including software system design; software optimization; & coding, testing & debugging of existing & newly created applications & utilities. Req's: Bachelor's degree, or equiv, in Comp Sci, Info Tech or related field. 5 yrs exp in job offered or 5 yrs exp in software applications dev. Exp must include analysis & design using UML diagrams & Rational Rose, design patterns, applet development, multithreaded & embedded application dev, database design & implementation using Borland Database Engine, Paradox databases & ER modeling. Exp can be gained while pursuing degree. Prof in Borland C++, Visual C++, Standard Template Library in C++, Java, XML, ActiveX, COM, HTML, Visual Basic, Assembly & DLL. 40 hrs/wk. Send resume to Dimitry Dikman, EPAm Software Consultants, Inc., 139 Roy Lane, Huntingdon Valley, PA 19006.

**Systems Analyst w/ San Francisco-based IT consultants,** to work at various client sites in the Bay Area & other undetermined sites in the US. Implemt, maintain & upgrade Oracle ERP software pkgs. Reqs: Bach in Comp Sci, Engineering, Business, Logistics, HR, or closely related field + 2 yrs exp w/ Oracle applic. Send resumes, refs, and salary requirements to Attn: HR, IT Convergence, 150 E. Gilman St., Suite B2200, Madison, WI 53703.

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The VP of Engineering is responsible for directing design and specification of new products & services and for developing the 5by5 Networks Product Roadmap. Direct all aspects of company's software/hardware development ensuring all product development, testing and documentation milestones are accomplished as scheduled. Create plans for implementation of new technical projects or product lines in conjunction with sales/marketing directives to ensure products meet real customer/ market needs. Contribute to company plans and strategies to enable rapid and sustained growth in the telecommunications marketplace.

Qualifications: BS in CS, EE, Math, or related & 8 yrs. sr. engineering mgmt. exp. in telecom, industry; successful management & team building experience; exp. in development, delivery and deployment of a successful product to the marketplace; in-depth knowledge of the VoIP industry including protocols, signaling and network infrastructure and telecommunication carriers; exp. in developing VoIP network components & signaling protocols; exp. working with NMS protocols; and familiarity with product certification requirements and processes.

Please visit our website at [www.5by5networks.com](http://www.5by5networks.com) for more information on our exciting company and other employment opportunities. To submit a resume for one of our positions, please email to: [careers@5by5networks.com](mailto:careers@5by5networks.com) or fax: (916) 677-2680

EOE (no agencies please)

**SOFTWARE ENGINEER**

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## Benchmark

profit end-user group.

End users say such benchmarks are a big help.

"They save us a heck of a lot of time," said John Walsh, vice president of information security at Allfirst Financial Inc. in Baltimore. He uses security benchmarks to configure hundreds of servers. "They are accepted industrywide as a good place to start when building a secure system," Walsh said. "I think there is a lot of value in them."

But the benchmark's backers also hope that its broad-based support can be used to send a

message to vendors about the need for strong security before products are shipped.

"We want to use the power of a user consensus to influence the vendors and [original equipment manufacturers] to secure these systems before they ever ship them, at least to a minimal level," said Clint Kreitner, president and CEO of Bethesda, Md.-based CIS.

If vendors put in security settings before products are shipped, "we can install it and run it, rather than go through another process," said John Gilligan, CIO of the U.S. Air Force. Today, military IT professionals must configure and test security settings before deploying each workstation, he said.

But even if vendors shipped systems meeting benchmark standards, Walsh said it would not stop him from verifying it. He compared it to a military job he had many years ago as a parachute rigger. "I implicitly trusted the people I worked with, but I only jumped with my own chute," he said.

The benchmark gives users a "preflight checklist" of security settings. Administrators can use the baseline standard to configure systems before rolling them out to users.

The Windows 2000 benchmark grew out of benchmarks developed by various federal agencies, but it was also based on a Microsoft Corp. security template, said Steve Lipner, director of security assurance at

Microsoft. The Windows 2000 benchmark provides detail, not fundamental changes, to Microsoft security practices, Lipner said. The company also worked on the benchmark.

The Windows 2000 security settings are set at "moderate" levels and set in a way to ensure applications won't break, said Lipner. Preconfiguring PCs with Windows benchmarks before they're shipped would be something vendors could ultimately do, he said.

Microsoft's efforts to beef up security won praise from Richard Clarke, special adviser to the president on cyberspace security, who also called the private- and public-sector collaboration "an example of how things should be done." ▶

## Helping Hand

The Center for Internet Security's benchmarks in development include:

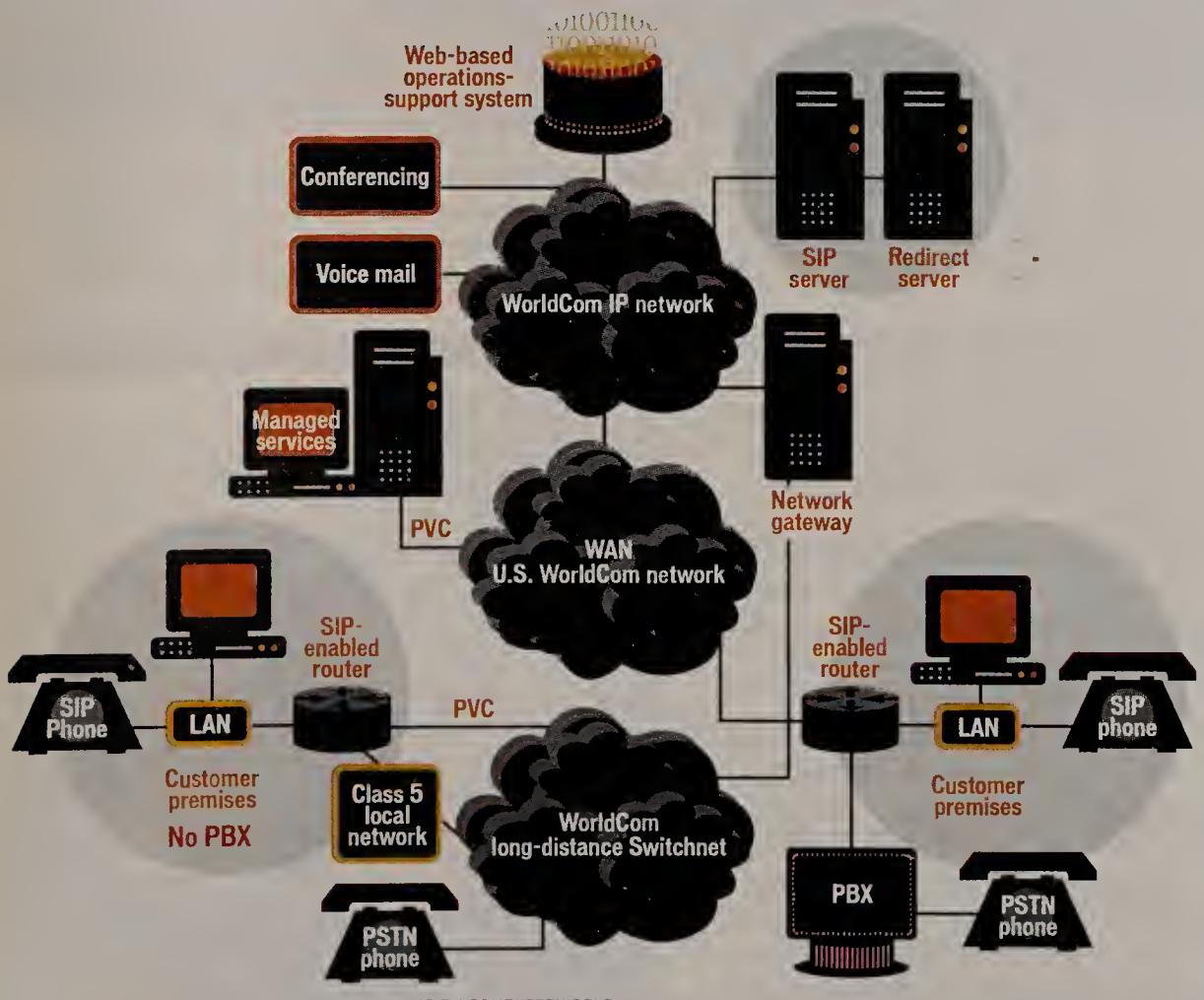
- IBM's AIX
- Apache Web Server
- Cisco PIX Firewall,
- Windows IIS Web Server

CIS benchmarks already released include:

- Sun Solaris
- Linux
- HP-UX
- Cisco IOS router
- Windows 2000, NT

The benchmarks are available at [www.cisecurity.org.ljhoi](http://www.cisecurity.org.ljhoi)

## WorldCom's Next Generation



SOURCE: INTERNAL WORLDCOM DOCUMENTS OBTAINED BY COMPUTERWORLD

- SIP: Session Initiation Protocol ■ PSTN: Public switched telephone network
- PBX: Private branch exchange ■ PVC: Permanent virtual circuit

Continued from page 1

## WorldCom

"I don't think many people will buy it" while WorldCom's financial situation is unsettled, said Zeus Kerravala, an analyst at The Yankee Group.

Analyst Kate Gerwig at Current Analysis Inc. in Sterling, Va., agreed, saying customers won't trust the WorldCom brand for some time. She suggested it would be better to roll out the service after WorldCom pares its operations and rights its financial ship.

David Willis, an analyst at Meta Group Inc., said WorldCom has invested heavily in Session Initiated Protocol technology, which bridges the gap between circuit-switched and packet-based networks, and it has been building toward a full VOIP offering. "It was supposed to be launched in June, but they got distracted," he said.

The internal documents convey the company's conviction that the VOIP market is on the verge of large-scale adoption, stating that "circuit-switched networks are now too expensive to operate" and IP-based

phone calls will become the norm in the next five years.

The service is designed to work with all handsets and networking gear. Its ultimate goal is to replace traditional telephony systems, eliminating the difference between local and long-distance calls while making applications such as unified messaging part of an enterprise's core communications infrastructure.

Kerravala cautioned that many users lack the LANs to support VOIP traffic and that many remain doubtful that IP telephony will achieve the sound quality and secure communications of a traditional telephone network.

"There's a perception of risk associated with it, and I'm not even talking about the WorldCom risk," Willis said. "It's a bit premature to expect customers to flock to this type of offering." ▶

Reporter Marc L. Songini contributed to this story.

## THE RACE IS ON

Competitors AT&T and SBC are already proceeding with IP telephony.

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# THE BACK PAGE

FRANK HAYES/FRANKLY SPEAKING

## Security? No — Costs

**A** COMPANY CALLED Serena Software Inc. has been trying to sell me on the idea that software configuration management is an important security tool in these days of terrorist dread. The idea is that somebody inside or outside your organization could sabotage critical source code, and without a good configuration management system, you'd never know until it was too late.

Of course, Serena makes pricey, high-end configuration management tools, so it's not exactly an impartial observer. But security does matter, and so does good configuration management.

So, will fear of sabotage get corporate IT shops looking at their configuration management needs anytime soon? Probably not.

After all, how likely is that kind of source-code sabotage in most IT shops? Why would somebody go to the trouble of corrupting a Web store's source code, when a buffer overflow attack is so much easier? Why attack any custom application, when the real damage would be minuscule compared with a conventional terrorist attack? It's not a credible threat.

No, fear of sabotage probably won't put configuration management on your agenda. Neither will fear of a business catastrophe caused by a new application that doesn't work and can't be rolled back. And fear of confusion and chaos in your software development projects won't do it. Most of us have lived with that for years.

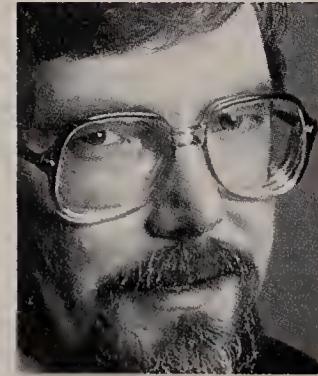
Right now, just one thing will make us look hard at beefing up our configuration management systems: the possibility that it will cut costs.

And that doesn't look likely, does it? These big-deal configuration management systems — the kind sold by Serena and IBM and Computer Associates and Compuware and Rational Software — cost a bundle. They're a lot of work to set up so that all of your mainframe and server and PC and Web code is tracked by the system. They require training and time and discipline.

All that translates into money spent, not money saved. And unless you need it to get ISO 9000 certification or to nail down a defense contract, why even think about configuration management now?

Why? Because you can't cut costs if you don't know what you've got.

You can't streamline software development if your Web developers and mainframe programmers are



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duplicating one another's work. You can't simplify transactions and shorten processes with a patchwork of ad hoc, outdated, single-project configuration management tools. You can't even see the opportunities to cut costs.

Until just recently, that didn't matter, because we weren't worrying much about costs. During the Internet boom, we had plenty of money and bodies to throw at every problem. We made things up as we went along, mixing and matching desktop software and back-end systems and Web sites, repurposing mainframes as servers and applications as Web pages, turning our customers into users.

OK, so we reinvented lots of wheels and ended up with lots of mystery code, but speed was more important than money or formal processes or knowing what we had. We were working in Internet time, all the rules were broken, and chaos was our friend.

Now the party's over. Money and bodies are in short supply, and to make the most of what we've got, we need to *know* what we've got. We can't afford the luxury of chaos now — and we'll likely never be able to afford it again.

Maybe we won't implement state-of-the-art enterprise configuration management this year — this is pricey stuff, after all, and it's the worst possible time to try to come up with the money.

But soon we will. If we really want to squeeze the most out of our software assets, we have no choice.

Because in the long run, if we manage our software development better at an enterprise level, we will cut costs — and speed development, reduce risks and, yes, improve security, too. ▶

## SHARK TANK

**USER** complains to help desk pilot fish that he updated a file, but when he reopened it the next day, his changes were gone. "Are you sure," he asks, "that the backup tape isn't back-filling overnight and replacing the file from the previous day?"

**IT MANAGER** pilot fish is brought in late in the game on a document-scanning project to digitize a million pages for a state permit department. Fish notices the vendor's license specifies that it can scan only 25,000 pages per month and does the math — it'll take 40 months. Why are you planning to spend almost four years to do this? he asks permit technician. Baffled technician replies, "Why do you think it'll take four years?"

**WHEN USERS** at a remote site can't connect to the company's servers, pilot fish scrambles to rewire connections to the line-of-sight antenna that links the remote site. Fish has just started working inside the wiring cabinet when a maintenance guy asks, "Should the UPS over here be beeping?" Sure enough, that's

the UPS the antenna is plugged into. "I had to shut the breaker off yesterday," the maintenance guy says. "That didn't cause any problems, did it?"

**BLOWING** the dust out of his mouse didn't solve the problem, user tells help desk pilot fish. But he did take a good look around while dusting its innards. "Could the problem be that the felt is wearing off the wheels inside the mouse?" he asks. "That's not felt," fish sighs. "That's just dirt that's built up."

**AFTER A** power outage, user calls network engineer pilot fish to complain he can't access a small file server that fish knows isn't on a UPS. "Is the server powered on?" fish asks. User checks. "It's not on," he says. "Should we power it up?"

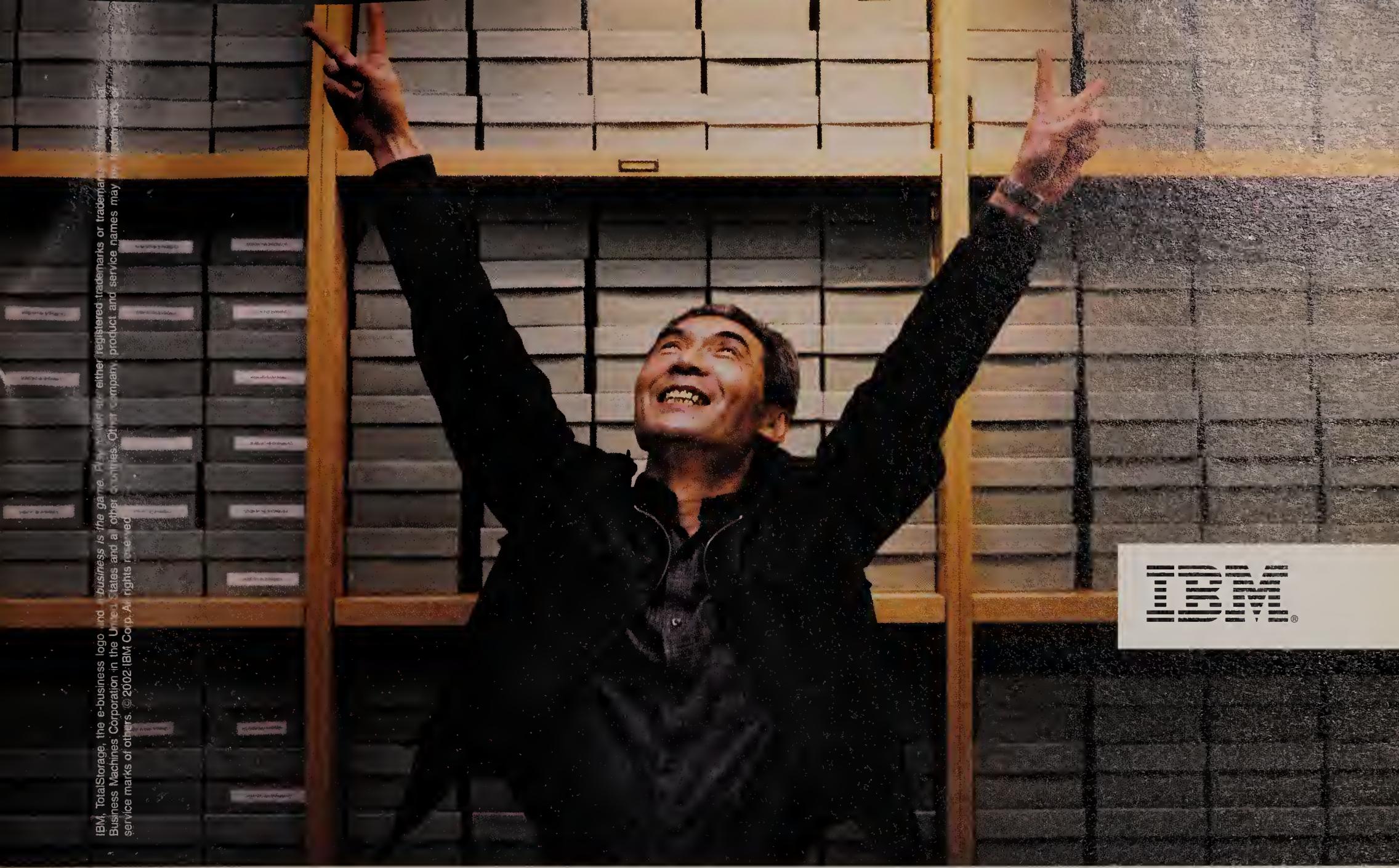
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## The 5th Wave



"Here's a little tip on disassembly that you won't find in the manual."

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